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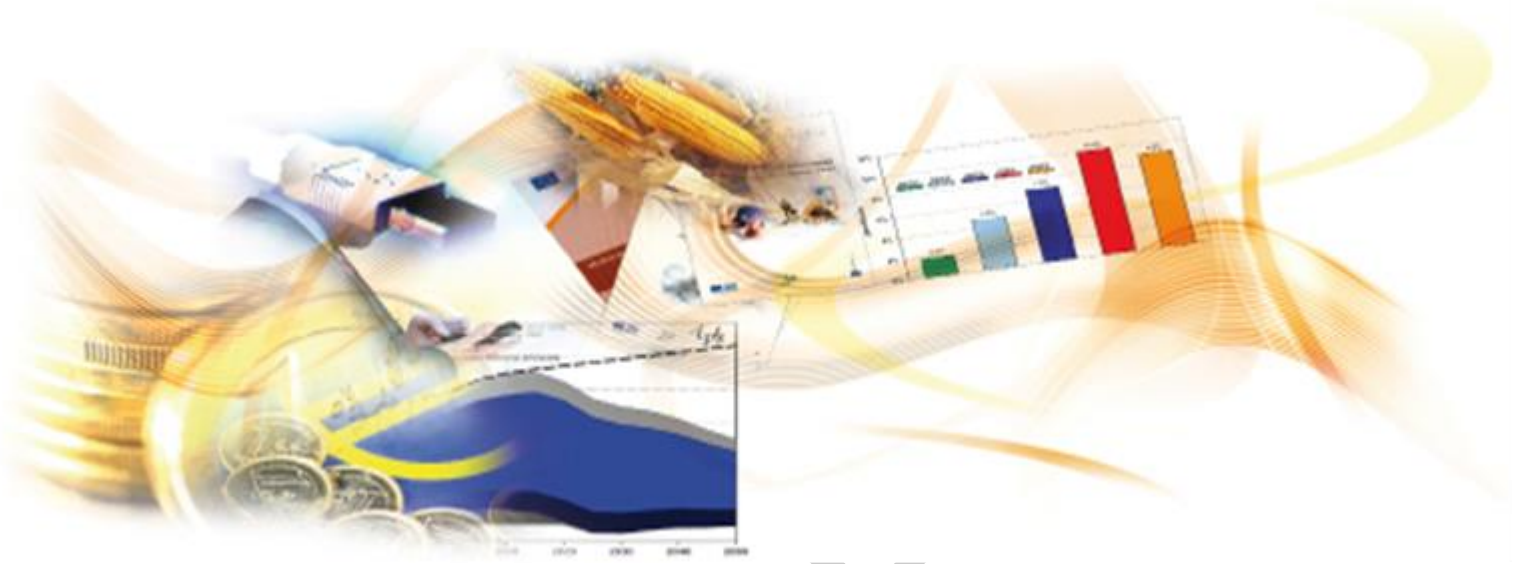

JRC TECHNICAL REPORTS

Revision of European Ecolabel Criteria for the six detergent product groups

Technical report and draft criteria proposal
For the 2nd AHWG meeting
(Draft)

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Joint Research Centre

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1 GENERAL INTRODUCTION

This combined Technical Report is an update on the progress of the revision of the six EU Ecolabel criateria related to detergents, to be released ahead of the 2nd Ad-Hoc Working Group (AHWG) meeting taking place in Brussels on October 20-21, 2015. The simultaneous revision of the six product groups aims to:

- harmonise the criteria sets,
- set ambitious, yet achievable goals,
- focus on the most relevant environmental aspects.

Background information for this document is available on the project website [1] in the shape of:

- preliminary reports (4 reports – LD and IILD, DD and IIDD, HDD, and APC),
- 1st Technical Reports (6 reports – one for each product group) complemented by a Technical Annex.

Information included in the above-mentioned reports is summarised in the following sections but they should be consulted for a full understanding of the revision process.

The methodology and sources of information used until this point of the project include: literature review, legal review, market analysis, in-house LCAs, stakeholder questionnaires, 1st AHWG meeting discussions, stakeholder comments on 1st Technical Reports, EUEB discussions, bilateral meetings of relevance, etc.

1.1 Revision timeline

Dec. 2013 (June 2014) – kick-off meeting of project for LD, IILD, DD and IIDD (HDD, APC)
Dec. 2014 – release of documents prior to 1st AHWG meeting
Jan. 2015 – 1st AHWG meeting
Sept. 2015 – release of documents prior to 2nd AHWG meeting
Oct. 2015 – 2nd AHWG meeting
April 2015 (expected) – presentation of final criteria to EUEB
June 2015 (expected) – vote

1.1.1 How to read this document

While the six product groups were covered in six separate documents (and a technical annex) released prior to the 1st AHWG meeting, in order to minimise repetition and increase coherency with the document released in the BATIS system for commenting, the present document covers all six product groups and is structured as follows:

- Section 1 contains a description of the goals of the project, a summary of the information collected up to this point, and links between the prepared documents: preliminary report, 1st Technical Reports and this document. The main conclusions of the preliminary reports are included in Section 1.2 as well as the relationship between the proposed criteria and LCA and non-LCA environmental hotspots. Finally, Section 1 ends with a summary of the main proposed changes, for each product group, between the existing EU Ecolabel criteria and the proposals made in this report.

- Sections 2 – 7 each cover one of the six product groups under revision. These sections contain extracts of the proposed decision text (e.g. name, scope, reference dosage) and the proposed criteria text.

- Section 8 is a technical document that presents the research performed for all the criteria for the six product groups under revision. Each sub-section covers an issue, often horizontal and common to two or more product groups, through the common criterion text template proposed (where applicable), stakeholder feedback received after the 1st AHWG meeting, horizontal research and research specific to each product group.

For a full understanding of the development of each criteria set, stakeholders are invited to read through the individual criteria texts that are of interest to them (Sections 2 - 7) as well as Section 8.

Stakeholders are also invited to submit their comments through the BATIS system. Comments should be provided on specific aspects such as thresholds in Sections 2 - 7 and comments on general concepts and the common criteria text templates should be made in Section 8.

1.2 Summary of the background information

Main environmental hotspots and links to criteria

Throughout the preliminary reports for the different product groups, similar environmental hot spots were highlighted. Thus, the overall proposed structure and criteria for all six product groups is similar.

This document shows the process and the evidences to draft the EU Ecolabel criteria that tackle the mentioned main environmental impacts identified through the LCA analysis and the non-LCA impacts identified by revising other sources. The EU Ecolabel criteria are developed to directly or indirectly address the identified LCA and non-LCA impacts (e.g., the choice and amount of surfactants is an environmental impact directly addressed through one or several EU Ecolabel criteria while the amount of detergent is indirectly addressed). The "energy source used to heat the water" is the only environmental impact that cannot be addressed through the EU Ecolabel as it is not directly linked to the products; even when consumers can choose the source of energy to heat the water or an electricity provider with a share of renewable energies, this is something out of the scope of what can be promoted through a product environmental label. Moreover, even though waste generation was not among the top KPIs for most product groups, it can still have an impact of up to 36% for some environmental aspects. Given the prevalence of different detergent and cleaning products in everyday life and the fact that they all come with packaging, a relatively small impact can quickly add up; thus, this aspect is also considered in the EU Ecolabel.

Apart from the LCA analysis, a revision of other scientific evidences, current national schemes and legislation have been performed. These sources of information pointed out the potential presence of substances in detergents that can have environmental and health impacts and these are addressed according to Articles 6.6 and 6.7 of the Regulation EC/66/2010 on the EU Ecolabel [2].

Table 1 summarises the links between the identified the hotspots of interest to the EU Ecolabel and the revised criteria proposals. The relevance of each identified hotspot is reported in previous Technical Reports and Preliminary Studies.

Table 1. Link between the hotspots identified (LCA and non-LCA impacts) and the revised EU Ecolabel criteria (where a criterion is not found in all six product group, the relevant products are listed in parenthesis).

Identified LCA & non-LCA hotspots	Revised or new EU Ecolabel criteria	Comments on the related criteria
Wash temperature	User information	The criterion encourages users to opt for lower water temperatures.
	Fitness for use	It ensures that the product is fit to wash at low temperatures for LD/IILD (15-30C depending on the product) or conditions recommended by the manufacturer for DD/IILD/APC/HDD.
	Information appearing on the EU Ecolabel	It informs consumers that the product's performance has been tested under realistic conditions and even at low temperatures.
Energy sources to heat up the water	--	Out of the scope of this policy tool
Amount of product used per application	User information	It informs users about the amount of product to be used depending on the washing conditions.
	Dosage requirement (LD, DD)	This criterion limits the amount of product that manufacturers can recommend to users.
	Automatic dosing systems (IILD, IIDD)	The criterion ensures that users do not use an incorrect dose when using multi-component systems.
Choice and amount of surfactants	Biodegradability	It ensures that surfactants are biodegradable and will not persist in the environment.
	Restricted substances	It ensures that hazardous surfactants are not included in the bill of materials.
	Phosphorus content	It limits and restricts the types of phosphorus compounds that can be included as ingredients.
	Sustainable Palm oil	It ensures that the extraction of palm oil used to produce renewable surfactants does not cause unnecessary strain on the ecosystem.
Emissions to water	Toxicity to aquatic organisms	It ensures that the sum of the ingredients is not toxic to the aquatic organisms.

Identified LCA & non-LCA hotspots	Revised or new EU Ecolabel criteria	Comments on the related criteria
	Biodegradability	It ensures that ingredients are not persistent in the environment.
	Phosphorus content	It ensures that eutrophication due to phosphorus is limited.
	Restricted substances	It ensures that hazardous substances do not reach water ways.
Waste generation	Packaging	It ensures that a limited amount of waste will be generated and that this waste can be recycled.
	User information	It reminds consumers to dispose of the packaging in a responsible manner.
Water consumption	User information	The criterion encourages users to opt for full wash loads. It provides information to the users on how to get the most out of the product while lowering the damage to the environment.
Hazardous substances	Hazardous substances and mixtures	This criterion limits the hazardous substances and mixtures that can be included in the product, limiting environmental and health risks for consumers.
	Ingoing substances listed in accordance with Article 59(1) of Regulation (EC) No 1907/2006	
	Information appearing on the EU Ecolabel	It informs consumers that the product has a limited amount of hazardous substances, in order to encourage the purchase of the product.

Laundry detergents (consumer and I&I)

Due to their multiple overlaps, laundry detergents and industrial and institutional laundry detergents were covered by the same Preliminary Report. The main findings of the Preliminary Report are:

-The *market analysis* revealed that the laundry detergent market in Europe is dominated by a few well-known brands. Laundry detergents are available in a range of formats, but liquid laundry detergents account for the largest market share in Europe, closely followed by powder laundry detergents. Market trends show that sustainability is of growing importance to consumers of laundry detergents, with an increase in concentrated/compacted products, use of plant-based ingredients and minimisation of packaging. IILDs only account for 4 % of the retail value of the EU market for laundry detergent products.

- The *legal review* revealed that important changes have been introduced at member state and European level regarding the production of detergents and cleaners. The mos relevant one is the revision of the EU Detergents Regulation (EC) No 259/2012 [3]. This regulation limits the use of phosphorus compounds in consumer laundry detergents but it does not cover industrial and institutional laundry detergents.

-The *technical analysis* revealed that the key environmental impacts associated with the two laundry detergent product groups can be summarised as follows:

The life cycle stage with the largest contribution to the environmental impact profile of laundry detergents is the use phase, particularly the energy needed to heat the water for the wash cycle. For some impact categories, the sourcing of raw materials is also important.

Based on the normalisation chosen, the most significant impact categories for laundry detergents in Europe are freshwater eutrophication, human toxicity, freshwater ecotoxicity, marine ecotoxicity, and natural land transformation.

These impacts are strongly correlated to each other via the energy consumption in the use phase (with the exception of natural land transformation). The use phase dominates the impact categories freshwater eutrophication, human toxicity, and marine ecotoxicity, and ingredients sourcing dominates the freshwater ecotoxicity and natural land transformation.

The key environmental performance indicators (KPIs), i.e. those variables that mainly drive the results for laundry detergents in Europe, based on the results of this study are (not ranked):

- Wash temperature,

- Amount of product used per application,
- Choice of and amount of surfactant (although there are trade-offs between impact categories),
- Energy source used to heat the water,
- Emissions to water.

Dishwasher detergents (consumer and I&I)

Due to their multiple overlaps, dishwasher detergents and industrial and institutional dishwasher detergents were covered by the same Preliminary Report. The main findings of the Preliminary Report are:

-The *market analysis* revealed that the dishwasher detergent market is primarily intra-EU trade, with five large manufacturers accounting for 65 % of the European market. Consumer dishwasher detergents are mainly sold in three forms (powder, liquid, tablets) of which the most popular is tablets and accounts for an estimated 83 % of the market share in Europe, based on sales.

- The *legal review* revealed that important changes have been introduced at member state and European level regarding the production of detergents and cleaners. The mos relevant one is the revision of the EU Detergents Regulation (EC) No 259/2012 [3]. This limit the use of phosphorus compounds in dishwasher detergents by 2017. This Regulation does not cover industrial and institutional dishwasher detergents.

-The *technical analysis* revealed that the key environmental impacts associated with the two dishwasher detergent product groups are caused during the use phase, particularly the energy needed to heat the water for the wash cycle. For some impact categories, the sourcing of raw materials is also important.

- Based on the normalisation chosen, the most significant impact categories for consumer dishwasher detergents in Europe are fossil depletion, climate change, human toxicity, particulate matter formation, and natural land transformation. These impacts are strongly correlated to each other via the energy use in the use phase (with the exception of natural land transformation). The use phase dominates the impact categories freshwater eutrophication, human toxicity, and marine ecotoxicity, whereas freshwater ecotoxicity and natural land transformation are dominated by ingoing substances sourcing.

The KPIs, based on the results of this study are:

- Amount of product used per application,
- Choice of and amount of surfactant (although there are trade-offs between impact categories),
- Wash temperature,
- Energy source used to heat the water,
- Emissions to water.

Hand dishwashing detergents

The Preliminary Report presents the research carried out on areas related to the product group covered by the EU Ecolabel on hand dishwashing detergents. The main findings of the Preliminary Report are:

- The *market analysis* reported that the total retail value of the EU market for hand dishwashing detergents is €1,8 bn. Innovation in the hand dishwashing detergents market is relatively limited, and is primarily driven by adding functionality to the product. The range of hand dishwashing detergent products available includes budget variety, premium products and products that are sold as environmentally friendly.

- The *technical analysis* found that the key environmental impacts are mainly caused during the use phase, particularly the energy needed to heat the water. For some impact categories, the sourcing of raw materials and the end of life are also important.

- Based on the normalisation chosen, by far the most important impact categories for hand dishwashing detergents in Europe are natural land transformation and fossil depletion. The results of the LCA for a hand dishwashing detergent conducted as part of the technical analysis showed that

the ingoing substances represent an important contribution to characterised midpoint results, in particular for terrestrial ecotoxicity, agricultural land occupation and natural land transformation. Of all the ingoing substances, the surfactant ethoxylated alcohol accounts for the largest contribution to these impact categories. However, the use phase is by far the most dominant for the impact categories. The manufacturing and disposal phases are also important contributors to the freshwater, terrestrial and marine ecotoxicity impact categories.

The KPIs based on the results of this study, are (not ranked):

- Amount of product used,
- Formulation - specifically the choice and amount of surfactants,
- Energy consumed to heat the water (if warm water is used),
- Energy source used to heat the water (if warm water is used).

All-purpose cleaners and sanitary cleaners (and window cleaners)

The Preliminary Report presents the research carried out on areas related to the product groups covered by the EU Ecolabel on all-purpose cleaners and sanitary cleaners. The report provides background information that underpins to the new criteria proposals.

The main findings of the Preliminary Report are:

-The *market analysis* reported that the total retail value of the EU market for hard surface cleaning is €5,7 bn. The cleaning market across Europe can be further categorised as all-purpose cleaners (46%), window/glass cleaners (4%), sanitary cleaning (36%) and other ancillary cleaning products (14%). Consumer choice of cleaning products is driven by ease of use and convenience of the product, price, health and safety during use and efficacy of the product.

-The technical analysis found that the key environmental impacts of APCs are mainly due to the extraction stage. For window/glass cleaners packaging has a larger contribution than ingredient extraction. When warm water is used to rinse off the product during use, the use phase has a significant impact. However, this is only relevant for some of the products covered by this product group, such as kitchen cleaners and all-purpose cleaners.

- Based on the normalisation chosen by far the most important impact category for all-purpose cleaners in Europe is natural land transformation

The results of the LCA for a general purpose cleaner showed that ingredient extraction is an important contributor to the characterised midpoint results, particularly for the terrestrial ecotoxicity, agricultural land occupation and natural land transformation impact categories. Of all the ingoing substances, the majority of the environmental impact can be attributed to ethoxylated alcohol surfactants. The manufacturing, use and disposal phases also represent important contributors to the overall environmental impact.

The KPIs based on the results of this study, are (not ranked):

- Amount of product used per application,
- Formulation – specifically the choice and amount of surfactant,
- Energy consumed to heat the water (if warm water is used),
- Energy source used to heat the water (if warm water is used).

Moreover, even though waste generation was not among the top 4 KPIs named previously, it can still have an impact of up to 37% for some environmental aspects. This environmental impact score can even being higher in the case of window cleaners. Given the prevalence of cleaners in everyday life and the fact that they all come with packaging, a relatively small impact can quickly add up; thus, this aspect is also considered in the EU Ecolabel.

Energy consumption in the use phase and EU Ecolabel criteria

Energy consumed to heat up the washing water represents an important part of the overall environmental impacts attributed to detergents, as hot water is often used during the use phase. The environmental impacts due to the heating of water can be reduced either by choosing a cleaner energy source to heat up the water or

by reducing the overeall energy necessary to heat the water (either by reducing its temperature or the amount of water used).

Influencing the choice of the energy source used for water heating is not in the hands of the EU Ecolabel scheme, as reported in detail in [4]. But the EU Ecolabel scheme can, to some extent, influence the water temperature and the amount of water used during the use phase as described below; further details of the discussion can be found in [4].

All detergents are not equal when it comes to water temperature and amount of water used. Some detergents and cleaners claim that they can be effectively used with cold water while others require high temperatures to fulfil their function. Recent market trends indicate that some products that have been traditionally used at high temperatures (LD) are now being developed to be effective in cold water/low water temperatures and are becoming more popular among users. However, even if there is a trend for producers to develop products that are effective at low temperatures, this does not guarantee that a lower washing temperature will be used as this largely depends on user behaviour.

Appliances have also been developed to include sensors that adjust their performance to the load, thus saving water and energy. This technology is more efficient for washing machines than for dishwashers due to the machine performance itself and user behaviour still have an impact on the overall energy performance. Therefore, the users are the ones responsible for correctly using the products and appliances and those that take the ultimate decision of whether warm water will be used or not.

Influencing user behaviour is very complex, as the decisions made by users are both conscious and unconscious (i.e. culture, traditions, perceptions, etc. have an influence). A deep knowledge of the reasons of why users make the decisions they make and a good comprehension of the context of user behaviour are required to design EU Ecolabel requirements that address this issue [4]. In this revision of the EU Ecolabels related to detergents, it is proposed to tackle the question of energy consumption during the use phase through communication and by ensuring that EU Ecolabel products are efficient at low temperatures.

Where appropriate, the criterion ***"Fitness for use"*** is proposed to require that tests are performed at temperatures that are lower than commonly used by users in the case of consumer products and at the lowest temperature recommended by the manufacturer in the case of industrial and institutional products. Through such requirements, the EU Ecolabel can promote products that are truly effective at lower temperatures and contribute to convincing users that they can, indeed, save energy and money by using less hot water. This would create a positive attitude towards low/cold temperature products and increase their use.

Furthermore, the criterion **"*User information*"** is proposed to indicate statements related to water temperatures and recommendations to wash and use water at the lowest suitable temperature. This type of information is a direct point of contact between the user and the EU Ecolabel and is the best way the EU Ecolabel can influence user behaviour. While this approach only has a limited reach and requires the user to read, understand and follow instructions, it is important to improve the environmental education of consumers. Creative signs and slogans can also be developed to catch the attention of users and create a break in their routine. For example a large bucket with "cold water" written on it might cause a person to consider using cold water for floor cleaning instead of always turning to warm water.

The technical annex of the Technical Report 1.0 [4] explains in detail how each EU Ecolabel criteria set under revision is tackling this issue.

1.3 Main changes proposed compared to the existing EU Ecolabel criteria

For all six product groups, most of the existing criteria are still relevant in many aspects and essentially they are proposed to be kept with major or minor corrections, such as updated scopes and adjusted thresholds that highlight the best performers on the market. Additionally, some criteria are proposed to be deleted or added or restructured in order to harmonize the different product groups criteria.

The following changes are proposed compared to the existing criteria:

- changes in the ***names, scopes*** and ***definitions*** of some of the ***product groups***. For instance the product group called "All-purpose cleaners and sanitary cleaners' is proposed to be called 'Hard-surface cleaning products' to better reflect all products covered by the scope of this product group, which itself is proposed to be more open.

- changes in the ***names of criteria*** to bring harmonization among the product groups, such as in the "fitness for use" or the "user information" criteria,

- changes in the ***structure/order of the criteria.*** The criteria that deal with chemicals can now be found at the very top of the list followed by the criteria dealing with packaging, fitness for use, and information.

- change in the ***thresholds*** included in some criteria to better reflect the market, as indicated below:

Laundry Detergents

- Dosage requirements – no difference is proposed to be made between liquid and powder detergents, overall lower dosages for all detergent types,
- CDV – no difference is proposed to be made between liquid and powder detergents, lower value for 'Heavy-duty products, colour-safe detergent',
- Biodegradability – lower anNBO value for liquid 'Heavy-duty laundry detergent, colour-safe detergent',
- Packaging - one common WUR limit for all types of products.

Industrial and institutional laundry detergents

- No change of thresholds is proposed.

Dishwasher detergents

- Dosage requirements (proposed to replace requirements on total chemicals) – lower values for 'Single-function dishwasher detergent' and 'Multi-function dishwasher detergent',
- CDV – lower values proposed for the types of single and multi-function detergents and rinse aids,
- Biodegradability – lower value for 'Dishwasher detergents'
- Packaging – WUR is proposed to be introduced for the calculation, with new limits proposed for detergents and rinse aids,

Industrian and institutional dishwasher detergents

- CDV – lower values for 'Dishwasher detergents'and 'Multi-component systems' used with hard water,
- Biodegradability – lower anNBO value for 'Dishwasher detergents/ Multi-component system' used with hard water.

Hand dishwashing detergents

- CDV – lower value,
- Biodegradability – new values are proposed for aNBO and anNBO of organic compounds,

- Packaging – lower WUR value.

Hard surface cleaning products

- Reference dosages for RTU products are proposed to be updated,
- CDV – lower value for undiluted 'All-purpose cleaners' and RTU 'Sanitary cleaners', higher value for RTU 'All-purpose cleaners', new values are proposed for undiluted 'Window cleaners' and 'Sanitary cleaners',
- Biodegradability - new values for aNBO and anNBO of organic compounds will be set following the discussion at the 2nd AHWG meeting,
- Packaging – WUR for undiluted products is increased, new value is proposed for 'RTU products sold in bottles with trigger sprays'.

- changes in the ***criterion on biodegradability***. A harmonised criterion is proposed across all product groups. A restriction on the harmful to the environment and anaerobically non-degradable surfactants is proposed, along with requirements restricting the content of non-degradable organic compounds.

- in the ***criterion on substances***:

- Harmonisation of the lists of specified excluded substances, as well as requirements on fragrances, preservatives and enzymes of for all product groups,
- New proposed requirement on microorganisms for hard-surface cleaning products,
- Removal of derogation for surfactants classified with H411(Toxic to aquatic life with long-lasting effects) for handdishwashing detergents ,
- Removal of derogation for optical brighteners for laundry detergents,
- Proposed derogation for 6-(phthalimido)peroxyhexanoic acid (PAP) used as bleaching agent in laundry detergents and I&I laundry detergents,
- Proposed derogation for subtilisin classified with H411 (Toxic to aquatic life with long-lasting effects) for laundry detergents, I&I laundry detergents, dishwasher detergents and I&I dishwasher detergents,
- Proposed derogation for peracetic acid/hydrogen peroxide used as bleaching agent for I&I laundry detergents,

- deletion of the ***points criteria for laundry detergents*** since it was considered that it did not target the environmental improvement for which was developed,

- proposal of a criterion on **sustainable resourcing of palm oil**,

- rewording of the ***assessment and verification*** procedures, for example in the toxicity to aquatic organisms criteria or in the restriction of chemicals due to changes in the regulations at European level and other reasons.

Finally, multiple clarifications and modifications in the criteria wording have been added/introduced. These changes are mainly based on the stakeholder feedback and the further research carried out during the revision process. Examples of these changes are the introduction of revised Regulations, updated standards or new requirements in the packaging and fitness for use criteria.

2 PROPOSED EU ECOLABEL CRITERIA FOR LAUNDRY DETERGENTS

2.1 Name, scope and definition

The product group ‘Laundry Detergents' shall comprise any laundry detergent and pre-treatment stain remover falling under the scope of Regulation (EC) No 648/2004 of the European Parliament and of the Council on detergents which are marketed and used for the washing of textiles principally in household machines, but not excluding their use in public laundrettes and common laundries.

Pre-treatment stain removers include stain removers used for direct spot treatment of textiles (before washing in the machine) but do not include stain removers dosed in the washing machine and stain removers dedicated to other uses besides pre-treatment.
This product group shall not comprise products that are dosed by carriers such as sheets, cloths or other materials nor washing auxiliaries used without subsequent washing such as stain removers for carpets and furniture upholstery.

2.2 Definitions

For the purpose of this Decision, the following definitions shall apply:

(1) "ingoing substances" means substances intentionally added, by-products and impurities from raw materials in the final product formulation (including water-soluble foil, if applicable);

(2) "heavy-duty detergents" means detergents used for ordinary washing of white textiles at any temperature;

(3) "colour-safe detergents" means detergents used for ordinary washing of coloured textiles at any temperature;

(4) "light-duty detergents" means detergents intended for delicate fabrics;

(5) "primary packaging" means

- for single doses in a wrapper that is intended to be removed before washing, the individual dose wrapping in direct contact with the content and the packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase, including label where applicable;

- for all other types of products, packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase in direct contact with the content, including label where applicable;

(6) "microplastics" means plastic micro beads used as a scrub/abrasive material in detergent and cleaning products.

2.3 Assessment and verification requirements and measurement thresholds

A) Requirements

The specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or their supplier(s) as appropriate.

Competent Bodies shall preferentially recognise attestations which are issued by bodies accredited according to the relevant harmonised standard for testing and calibration laboratories and verifications by bodies that are accredited according to the relevant harmonised standard for bodies certifying products, processes and services.

Where appropriate, test methods other than those indicated for each criterion may be used if the Competent Body assessing the application accepts their equivalence.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications.

As pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

The Appendix I makes reference to the "Detergent Ingredient Database" list (DID list) which contains the most widely used ingoing substances in detergents and cosmetics formulations. It shall be used for deriving the data for the calculations of the Critical Dilution Volume (CDV) and for the assessment of the biodegradability of the ingoing substances. For substances not present on the DID list, guidance is given on how to calculate or extrapolate the relevant data. The latest version of the DID list is available from the EU Ecolabel website or via the websites of the individual competent bodies.
The following information shall be provided to the competent body:

(i) The list of all ingoing substances indicating trade name, chemical name, CAS no., DID no., the ingoing quantity, the function and the form present in the final product formulation (including foil) at or above the following concentrations:
- preservatives, fragrances and colouring agents - regardless of concentration,
- other ingoing substances - 0,010% by weight;

For each ingoing substance listed, the safety data sheet in accordance with Regulation (EC) No 1907/2006 of the European Parliament and of the Council shall be provided.
(ii) If a supplier prefers not to disclose the ingoing substances included in a mixture to the applicant, the information can be sent directly to the Competent Body by the supplier;
(iii) In exceptional cases, if the ingoing substances included in a mixture are unknown, the applicant can supply the information requested in (i) for the mixture.

B) Measurement thresholds

Compliance with the ecological criteria is required for all ingoing substances as specified in Table 18.

Table 18. Threshold levels applicable to ingoing substances by criterion for xxxx Detergents

Criterion name		surfactants	preservatives	colouring agents	fragrances	other
Toxicity to aquatic organisms		≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Biodegradability	Surfactants	≥ 0,010	x	x	x	x
	Organics	≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Sustainable		≥ 0,010	x	x	x	x

sourcing of palm oil						
Excluded or limited substances and mixtures	Specified excluded and limited subst.	no limit*	no limit*	no limit*	no limit*	no limit*
	Hazardous subst.	≥0,010	≥0,010	≥0,010	≥0,010	≥0,010
	SVHCs	no limit*	no limit*	no limit*	no limit*	no limit*
	Fragrances	x	x	x	no limit*	x
	Preserva-tives	x	no limit*	x	x	x
	Colourants	x	x	no limit*	x	x
	Enzymes	x	x	x	x	≥ 0,010

* "no limit" means: regardless of the concentration, all substances intentionally added, by-products and impurities from raw materials (analytical limit of detection)

2.4 Reference dosage

The following dosage is taken as the reference dosage for the calculations aiming at documenting compliance with the EU Ecolabel criteria and for testing of cleaning ability:

Table 2. Dosage recommended by the manufacturers for each laundry detergent type

Heavy-duty detergent, colour-safe detergent	Dosage recommended by the manufacturer for one kilogram of normally soiled dry laundry (indicated in g/kg laundry or ml/kg laundry) calculated on the basis of the dosage recommended for a load of 4,5kg at a water hardness of 2,5 mmol CaCO3/l
Light-duty detergent	Dosage recommended by the manufacturer for one kilogram of normally soiled delicate laundry (indicated in g/kg laundry or ml/kg laundry) calculated on the basis of the dosage recommended for a load of 2,5kg at a water hardness of 2,5 mmol CaCO3/l
Stain remover (pre-treatment only)	Dosage recommended by the manufacturer for one kilogram of dry laundry (indicated in g/kg laundry or ml/kg laundry) calculated on the basis of 6 applications for a load of 4,5kg.

If the recommended dosage is stated for other wash load sizes than the above, the reference dosage used for calculation of the ecological criteria must, however, correspond to the average load size. If the water hardness of 2,5 mmol $CaCO_3$/l is not relevant in the Member States in which the detergent is marketed, the applicant shall specify the dosage used as the reference.

2.5 Criteria for Laundry Detergents

2.5.1 Criterion 1: Dosage requirements

The reference dosage shall not exceed the following amounts:

Table 3. Maximum reference dosage for each type of laundry product

Product type	Dosage
Heavy-duty detergent, colour-safe detergent	16 g/kg laundry
Light-duty detergent	10 g/kg laundry
Stain remover (pre-treatment only)	2,7 g/kg laundry

Assessment and verification:
The applicant shall provide the product label that includes the dosing instructions and documentation showing the density (g/ml) of liquid products.

2.5.2 Criterion 2: Toxicity to aquatic organisms

The critical dilution volume (CDV) of the product must not exceed the following limits for the reference dosage:

Table 4. Limit value of CDV per product type

Product type	Limit CDV
Heavy-duty detergent, colour-safe detergent	31 500 l/kg laundry
Light-duty detergent	20 000 l/kg laundry
Stain remover (pre-treatment only)	3 500 l/kg laundry

Assessment and verification:
The applicant shall provide the calculation of the CDV of the product. A spreadsheet for calculating of the CDV value is available on the EU Ecolabel website.
The CDV is calculated for all ingoing substances (i) in the product using the following equation:

$$CDV = \sum CDV(i) = 1000 \cdot \sum dosage(i) \cdot \frac{DF(i)}{TF(i)}$$

Where:
dosage(i): weight (g) of the substance or mixture i in the reference dose,
DF(i): degradation factor for the substance or mixture i
TF(i): toxicity factor for the substance or mixture i
The values of DF(i) and TF(i) shall be as given in the DID list Part A (Appendix I). If an ingoing substance is not included in the DID list Part A, the applicant shall estimate the values following the approach described in the DID list Part B (Appendix I).

2.5.3 Criterion 3: Biodegradability

(a) Biodegradability of surfactants

All surfactants shall be readily degradable (aerobically).

All surfactants classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable.

(b) Biodegradability of organic compounds
The content of organic substances in the product that are aerobically non-biodegradable (not readily biodegradable aNBO) or anaerobically non-biodegradable (anNBO) shall not exceed the following limits for a reference dosage:

aNBO

Product type	aNBO, powder	aNBO, liquid
Heavy-duty laundry detergent, colour-safe detergent	1,0 g/kg laundry	0,55 g/kg laundry
Light-duty detergent	0,55 g/kg laundry	0,30 g/kg laundry
Stain remover (pre-treatment only)	0,10 g/kg laundry	0,10 g/kg laundry

anNBO

Product type	anNBO, powder	anNBO, liquid
Heavy-duty laundry detergent, colour-safe detergent	1,3 g/kg laundry	0,60 g/kg laundry
Light-duty detergent	0,55 g/kg laundry	0,30 g/kg laundry
Stain remover (pre-treatment only)	0,10 g/kg laundry	0,10 g/kg laundry

Assessment and verification:

The applicant shall provide documentation for the degradability of surfactants, as well as the calculation of aNBO and anNBO for the product. A spreadsheet for calculating aNBO and anNBO values is available on the EU Ecolabel website.

For both surfactants and aNBO and anNBO values, reference shall be done to the DID list.

For ingoing substances which are not included in the DID list, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided as described in the Appendix x, which is available on the EU Ecolabel website.

In the absence of documentation in accordance with the above requirements, an ingoing substance other than a surfactant may be exempted from the requirement for anaerobic degradability if one of the following three alternatives is fulfilled:

1. Readily degradable and has low adsorption (A < 25 %);
2. Readily degradable and has high desorption (D > 75 %);
3. Readily degradable and non-bioaccumulating.

Testing for adsorption/desorption may be conducted in accordance with OECD guidelines 106.

2.5.4 Criterion 4: Sustainable sourcing of palm oil, palm kernel oil and their derivatives

Ingoing substances used in the products which are derived from palm oil or palm kernel oil shall be sourced from plantations that meet the criteria for sustainable management that have been developed by multi-stakeholder organisations that have a broad membership including NGOs, industry and government.

Assessment and verification:

The applicant shall provide third-party certifications that the palm oil and palm kernel oil used in the manufacturing of the product originates from sustainably managed plantations. Certifications accepted shall include RSPO (by identity preserved, segregated or mass balance) or any equivalent scheme based on multi-stakeholder sustainable management criteria. For chemical derivatives of palm oil and palm kernel oil, it is acceptable to demonstrate sustainability through book and claim systems such as GreenPalm or equivalent.

2.5.5 Criterion 5: Excluded and restricted substances

2.5.5.1 Sub-criterion (a): Specified excluded and restricted ingoing substances

(i) Excluded substances

Substances indicated in Table 47 shall not be included in the product formulation:

Table 47. List of substances excluded from detergents and cleaning products regardless of concentration

- APEO and ADP
- Atranol
- Chloroatranol
- Diazolinidylurea
- DTPA
- EDTA
- Formaldehyde
- Hydroxyisohexyl 3-cyclohexene carboxaldehyde (HICC)
- Microplastics
- Nanosilver
- Nitromusks and polycyclic musks
- Phosphates
- Per-fluorinated alkylates
- Quaternary ammonium salts not readily biodegradable
- Reactive chlorine compounds
- Sodium hydroxyl methyl glycinate
- Triclosan
- 5-bromo-5-nitro-1,3-dioxane
- 2-bromo-2-nitropropane-1,3-diol

(ii) Restricted substances

Substances listed below shall not be included in the product formulation above the specified mass concentration:
- Total content of phosphorus compounds in the product is limited to 0,03 g P/kg of laundry

- Fragrance substances subject to the declaration requirement provided in Detergents Regulation (EC) No 684/2004 shall not be present in quantities ≥ 0,010 % (≥ 100 ppm) per substance

Assessment and verification:

The applicant shall provide:

- a signed declaration of compliance supported by declarations from suppliers, if appropriate, confirming that the listed substances have not been included in the product formulation, either regardless of mass concentration (substances listed in (i)) or above specified concentration (substances listed in (ii)),

- for phosphorus: a) information on the complexing agent in the product (detail information of the type of phosphorus-containig substances added as ingredients), b) calculation of the product's total P-content.

2.5.5.2 Sub-criterion (b): Hazardous substances

The final product shall not be classified and labelled as being acutely toxic, a specific target organ toxicant, a respiratory or skin sensitiser, carcinogenic, mutagenic or toxic for reproduction, or hazardous to the environment, in accordance with CLP Regulationa.

The product shall not contain ingoing substances meeting the criteria for classification as toxic, hazardous to the environment, respiratory or skin sensitizers, carcinogenic, mutagenic or toxic for reproduction in accordance with CLP Regulationa and as interpreted according to the hazard statements listed in Table 57.

Any ingoing substance present at a concentration above 0,010% w/w in the product shall meet this requirement. Where stricter, the generic or specific concentration limits determined in accordance with Article 10 of CLP Regulation shall prevail to the cut-off limit value of 0,010% w/w.

Table 57. Restricted hazard classifications and their categorisation

Acute toxicity	
Category 1 and 2	**Category 3**
H300 Fatal if swallowed	H301 Toxic if swallowed
H310 Fatal in contact with skin	H311 Toxic in contact with skin
H330 Fatal if inhaled	H331 Toxic if inhaled
H304 May be fatal if swallowed and enters airways	EUH070 Toxic by eye contact
Specific target organ toxicity	
Category 1	**Category 2**
H370 Causes damage to organs	H371 May cause damage to organs
H372 Causes damage to organs through prolonged or repeated exposure	H373 May cause damage to organs through prolonged or repeated exposure
Respiratory and skin sensitisation	
Category 1A	**Category 1B**
H317: May cause allergic skin reaction	H317: May cause allergic skin reaction
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	**Category 2**
H340 May cause genetic defects	H341 Suspected of causing genetic defects
H350 May cause cancer	H351 Suspected of causing cancer
H350i May cause cancer by inhalation	
H360F May damage fertility	H361f Suspected of damaging fertility
H360D May damage the unborn child	H361d Suspected of damaging the unborn child
H360FD May damage fertility. May damage the unborn child	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child
H360Fd May damage fertility. Suspected of damaging the unborn child	H362 May cause harm to breast fed children
H360Df May damage the unborn child. Suspected of damaging fertility	
Hazardous to the aquatic environment	
Category 1 and 2	**Category 3 and 4**
H400 Very toxic to aquatic life	H412 Harmful to aquatic life with long-lasting effects
H410 Very toxic to aquatic life with long-lasting effects	H413 May cause long-lasting effects to aquatic life
H411 Toxic to aquatic life with long-lasting effects	
Hazardous to the ozone layer	
H420 Hazardous to the ozone layer	

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications in accordance with article 15 of CLP Regulationa. The hazard statements generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall apply.

Ingoing substances which change their properties upon processing (e.g. become no longer bioavailable or undergo chemical modification) so that the hazards no longer apply and that any unreacted residual content of the hazardous substances is less than 0,010% w/w are exempted from this criterion x(b).

This criterion does not apply to ingoing substances covered by Article 2(7)(b) of the REACHb which sets out criteria for exempting substances within Annex V from the registration, downstream user and evaluation requirements. In order to determine if this exclusion applies, the applicant shall screen any ingoing substance present at a concentration above 0,010% w/w.

Substances and mixtures included in Table 5 are exempted from the requirement of this criterion.

Table 5. Derogated substances

Substance	Hazard statement
Surfactants in total concentrations <25% in the final product	H400: Very toxic to aquatic life
	H412: Harmful to aquatic life with long-lasting effects

Subtilisin	H400: Very toxic to aquatic life H411: Toxic to aquatic life with long-lasting effects
Enzymes(*)	H317: May cause allergic skin reaction
	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
6-(phthalimido)peroxyhexanoic acid (PAP) as bleaching agent at max concentration of 0.6 g/kg laundry	H400: Very toxic to aquatic life H412: Harmful to aquatic life with long-lasting effects
NTA as an impurity in MGDA and GLDA (*)	H351: Suspected of causing cancer
Fragrances	H412: Harmful to aquatic life with long-lasting effects
Preservatives	[Consultation is ongoing]

(*) Including stabilisers and other auxiliary substances in the preparations

(**) In concentrations lower than 0,2 % in the raw material as long as the total concentration in the final product is lower than 0,10 %.

Assessment and verification:

The applicant shall demonstrate compliance with criterion x(b) for the final product and for any ingoing substance present at concentrations greater than 0,010 % in weight in the final product. A declaration of compliance shall be provided by the applicant supported, where appropriate, by the declarations from their supplier(s) that none of these substances meets the criteria for classification with one or more of hazard statements listed in Table 57 in the form(s) and physical state(s) they are present in the final product. Material safety data sheet for the final product shall also be provided.

The following technical information related to the form(s) and physical state(s) of the ingoing substances as present in the product shall be provided to support the declaration of non-classification:

(i) For substances that have not been registered under REACH and/or which do not yet have a harmonised CLP classification: Information meeting the requirements listed in Annex VII to REACH;

(ii) For substances that have been registered under REACH and which do not meet the requirements for CLP classification: Information based on the REACH registration dossier confirming the non- classified status of the substance;

(iii) For substances that have a harmonised classification or are self-classified: safety data sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to REACH;

(iv) In the case of mixtures: safety data sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under CLP Regulation together with information relevant to the mixtures hazard classification according to Annex II to REACH.

For substances listed in Annexes IV and V to REACH, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of REACH, a declaration to this effect by the applicant shall suffice to comply with criterion x(b).

A declaration on the presence of ingoing substances that fulfil the derogation conditions shall be provided by the applicant, supported, where appropriate, by declarations from their supplier(s). Where required for the derogation, the applicant shall confirm the concentrations of these substances in the final product.

2.5.5.3 Sub-criterion (c): Substances of very high concern (SVHCs)

The final product shall not contain any ingoing substances that have been identified according to the procedure described in Article 59(1) of REACH, which establishes the candidate list for substances of very high concern.

Assessment and verification:
The applicant shall provide a declaration of compliance, supported by declarations from their suppliers, as appropriate, on non-presence of the candidate list substances.
Reference to the latest list of substances of very high concern shall be made on the date of application.

2.5.5.4 Sub-criterion (d): Fragrances

Any ingoing substance added to the product as a fragrance shall be manufactured and handled following the code of practice of the International Fragrance Association (IFRA) available at http://www.ifraorg.org. The recommendations of the IFRA Standards concerning prohibition, restricted use and specified purity criteria for substances shall be followed by the manufacturer.

Assessment and verification:

The applicant, their supplier or fragrance manufacturer, as appropriate, shall provide a signed declaration of compliance.

2.5.5.5 Sub-criterion (e): Preservatives

(i) The product may only include preservatives in order to preserve the product, and in the appropriate dosage for this purpose alone. This does not refer to surfactants, which may also have biocidal properties.

(ii) The product may contain preservatives provided that they are not bio-accumulating. A preservative is considered to be not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used.

(iii) It is prohibited to claim or suggest on the packaging or by any other communication that the product has an antimicrobial or disinfecting effect.

Assessment and verification:
The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any preservative added, and information on its BCF and/or log Kow values. The applicant shall provide also artwork of the packaging.

2.5.5.6 Sub-criterion (f): Colouring agents

Colouring agents in the product shall not be bio-accumulating.

A colouring agent is considered not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used. In the case of colouring agents approved for use in food, it is not necessary to submit documentation of bio-accumulation potential.

Assessment and verification:
The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any colorant added together with information on its BCF and/or log Kow value, or documentation to ensure that the colouring agent is approved for use in food.

2.5.5.7 Sub-criterion (g): Enzymes

Only enzyme encapsulates (in solid form) and enzyme liquids/slurries shall be used.

Assessment and verification:
The applicant shall provide a declaration of compliance supported by copies of the safety data sheets of any enzyme added.

2.5.6 Criterion 6: Packaging

(a) *Weight/utility ratio (WUR)*

The weight/utility ratio (WUR) of the product shall be calculated for the primary packaging only and shall not exceed 1,2 g/kg wash for the reference dosage.

Plastic/paper/cardboard packaging containing more than 80 % recycled materials is exempted from this requirement.

Assessment and verification:
The applicant shall provide the calculation of the WUR of the product. If the product is sold in different packaging (i.e. with different volumes), the calculation shall be submitted for each packaging size for which

the EU Ecolabel shall be awarded. In the case of trigger sprays and the allocation of weight to the primary packaging, this shall be on the basis of pan-European sales data for the product, indicating unit sales of each.

The WUR is calculated as follows:

$$WUR = \sum((W_i + U_i)/(D_i * R_i)$$

Where:
Wi: weight (g) of the primary packaging (i),
Ui: weight (g) of non-recycled packaging in the primary packaging (i). Ui = Wi unless the applicant can document otherwise,
Di: number of reference doses contained in the primary packaging (i),
Ri: number of times that the primary packaging (i) can be refilled and used for the same purpose. Ri = 1 (packaging is not reused for the same purpose) unless the applicant can document a higher number.

The applicant shall provide a signed declaration for the content of recycled material, along with relevant documentation. Packaging is regarded as recycled if the raw material used to make the packaging has been collected from packaging manufacturers at the distribution stage or at the consumer stage. Where the raw material is industrial waste from the material manufacturer's own production process, then the material will not be regarded as recycled.

(b) *Design for recycling*

Plastic packaging shall be designed to facilitate effective recycling by avoiding potential contaminants and incompatible materials that are known to impede separation or reprocessing or to reduce the quality of recyclate. The label or sleeve, closure and, where applicable, barrier coatings shall not comprise, either singularly or in combination the materials and components listed in Table 72. Pumps are exempted from this requirement.

Table 72. Materials and components excluded from packaging elements

Packaging element	Excluded materials and components*
Label or sleeve	- PS label or sleeve in combination material used with a PET, PP or HDPE bottle - PVC label or sleeve in combination with a PET, PP or HDPE bottle - PETG label or sleeve in combination with a PET bottle - Sleeves made of different polymer than the bottle - Labels or sleeves that are metallised or are welded to a packaging body (in mould labelling)
Closure	- PS closure in combination a with a PET, HDPE or PP bottle - PVC closure in combination with a PET, PP or HDPE bottle - PETG closures and/or closure material with density of above 1 g/cm3 in combination with a PET bottle - Closures made of metal, glass, EVA - Closures made of silicone. Exempted are silicone closures with a density < 1 g/cm3 in combination with a PET bottle and silicone closures with a density > 1g/cm3 in combination with PEHD or PP bottle - Metallic foils or seals which remain fixed to the bottle or its closure after the product has been opened
Barrier coatings	Polyamide, EVOH, functional polyolefins, metallised and light blocking barriers

* EVA – Ethylene Vinyl Acetate, EVOH – Ethylene vinyl alcohol, HDPE – High-density polyethylene, PET – Polyethylene terephtalate, PETG – Polyethylene terephthalate glycol-modified, PP – Polypropylene, PS – Polystyrene, PVC – Polyvinylchloride

Assessment and verification:
The applicant shall submit a signed declaration of compliance specifying the material composition of the packaging including the container, label or sleeve, adhesives, closure and barrier coating, as appropriate, and a sample of primary packaging.

2.5.7 Criterion 7: Fitness for use

Tests shall be carried out to ensure that the product has a satisfactory wash performance at the lowest temperature and dosage recommended by the manufacturer for the water hardness according to the EU Ecolabel protocol available at:

http://ec.europa.eu/environment/ecolabel/documents/Performance%20Test%20Laundry%20Detergents.pdf

The test shall be preferentially performed by a laboratory complying with the relevant harmonized standards for testing and calibration laboratories.

Assessment and verification:

The applicant shall provide documentation confirming that the product has been tested under the protocol conditions and that the test results passed the minimum washing performance required.
Information shall be provided on the compliance within the laboratory requirements included in the relevant harmonized standards for testing and calibration laboratories, if appropriate.

Modifications proposed for the Revised EU Ecolabel performance test for Laundry Detergents available at:
http://ec.europa.eu/environment/ecolabel/documents/Performance%20Test%20Laundry%20Detergents.pdf

- pages 5 and 24: replace the name 'low-duty detergent' by 'light-duty detergent'

- page 5: replace "see Annex 1 for all definitions found in this document" by "see Annex 1 for all abbreviations found in this document"

- page 5: replace 'washing machine types' by 'washing machine reference'

- page 6: replace '2.5 mmol/L±0.2 mmol/L calculated as CaCO3 (250ppm=14±0.5°dH).' by '2.5±0.2 mmol $CaCO_3$/l (equivalence used 250 ppm $CaCO_3$=14±0.5°dH).'

- page 6: replace

'2.3 Water Inlet Temperate: 20.0 ±2.0°C

Products which claim to be efficient at a wash temperature lower than 20°C shall be tested at 15°C. In this case, the water inlet temperature will be different to the wash temperature for tested product (15.0 ±2.0°C) and reference detergent (20.0 ±2.0°C).

By

'2.3 Water Inlet Temperate: 20.0 ±2.0°C

Products which claim to be effective at a wash temperature lower than 20°C shall be tested at 15°C. If so, the water inlet temperature will for tested product (15.0±2.0°C) and for reference detergent (20.0 ±2.0°C).

- page 24: replace 'definitions' by 'abbreviations'

2.5.8 Criterion 8: User information

The detergent shall be accompanied by instructions for proper use so as to maximise product performance and minimise waste and use of resources. These instructions shall be legible or include graphical representation or icons and include information on (if appropriate):

(a) dosing instructions

The applicant shall take suitable steps to help consumers respect the recommended dosage, making available the dosing instructions and if possible a convenient dosage system (e.g. caps). Dosing instruction shall include information on the recommended dosage in g or ml and a second or alternative metric may be given in brackets (e.g. capsules, squirts, or other if the packaging has a dosage system). Recommended dosage for a standard load for at least two levels of soiling shall be included. Information on the impact of water hardness on dosing and indications of the most prevalent water hardness in the area where the product is intended to be marketed or where this information can be found shall be provided.

(b) resource saving measures

The applicant shall recommend washing at the lowest temperature the product claims effectiveness, which shall not be higher than 30C, and washing with full loads.

(c) packaging disposal information

The primary packaging shall include information on the reuse, recycling and/or correct disposal of packaging.

(d) environmental information

The following text should appear on the primary packaging: *"All detergents have an effect on the environment. For maximum effectiveness always use the correct dose and, the lowest recommended temperature. This will minimize both energy and water consumption and reduce water pollution"*.

Assessment and verification:

The applicant shall provide a declaration of compliance together wirh a sample of the product packaging, including the label.

2.5.9 Criterion 9: Information appearing on the EU Ecolabel

The logo should be visible and legible. The EU Ecolabel registration/licence number must appear on the product and it must be legible and clearly visible. Optional label with text box shall contain the following text:

— Harm to aquatic life is limited
— Amount of hazardous substances is restricted
— Tested for wash performance

Assessment and verification:

The applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a signed declaration of compliance.

3 PROPOSED EU ECOLABEL CRITERIA FOR INDUSTRIAL AND INSTITUTIONAL LAUNDRY DETERGENTS

3.1 Name, scope and definition

The product group 'Industrial and Institutional Laundry Detergents' shall comprise any laundry detergent falling under the scope of Regulation (EC) No 648/2004 of the European Parliament and of the Council on detergents designed to be used by specialised personnel in industrial and institutional facilities.

Included in this product group are multi-component systems constituted of more than one component used to build up a complete detergent or a laundering program for an automatic dosing system. Multi-component systems may incorporate a number of products including fabric softeners, stain removers and rinsing agents.

This product group shall not comprise products which induce textile attributes such as water-repellency, waterproofness or fire retardancy, etc. Furthermore, the product group shall not comprise products that are dosed by carriers such as sheets, cloths or other materials, as well as washing auxiliaries used without subsequent washing, such as stain removers for carpets and furniture upholstery.

Laundry products to be used in household washing machines are excluded from the scope of this product group.

3.2 Definitions

(1) "ingoing substances" means substances intentionally added, by-products and impurities from raw materials in the final product formulation (including water-soluble foil, if applicable);

(2) "primary packaging" means packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase in direct contact with the content, including label where applicable;

(3) "microplastics" means plastic micro beads used as a scrub/abrasive material in detergent and cleaning products.

3.3 Assessment and verification requirements and measurement thresholds

A) Requirements

The specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or their supplier(s) as appropriate.

Competent Bodies shall preferentially recognise attestations which are issued by bodies accredited according to the relevant harmonised standard for testing and calibration laboratories and verifications by bodies that are accredited according to the relevant harmonised standard for bodies certifying products, processes and services.

Where appropriate, test methods other than those indicated for each criterion may be used if the Competent Body assessing the application accepts their equivalence.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications.

As pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

The Appendix I makes reference to the "Detergent Ingredient Database" list (DID list) which contains the most widely used ingoing substances in detergents and cosmetics formulations. It shall be used for deriving the data for the calculations of the Critical Dilution Volume (CDV) and for the assessment of the biodegradability of the ingoing substances. For substances not present on the DID list, guidance is given on how to calculate or extrapolate the relevant data. The latest version of the DID list is available from the EU Ecolabel website or via the websites of the individual competent bodies.

The following information shall be provided to the competent body:
(i) The list of all ingoing substances indicating trade name, chemical name, CAS no., DID no., the ingoing quantity, the function and the form present in the final product formulation (including foil) at or above the following concentrations:
- preservatives, fragrances and colouring agents - regardless of concentration,
- other ingoing substances - 0,010% by weight;

For each ingoing substance listed, the safety data sheet in accordance with Regulation (EC) No 1907/2006 of the European Parliament and of the Council shall be provided.
(ii) If a supplier prefers not to disclose the ingoing substances included in a mixture to the applicant, the information can be sent directly to the Competent Body by the supplier;
(iii) In exceptional cases, if the ingoing substances included in a mixture are unknown, the applicant can supply the information requested in (i) for the mixture.

B) Measurement thresholds

Compliance with the ecological criteria is required for all ingoing substances as specified in Table 18.

Table 18. Threshold levels applicable to ingoing substances by criterion for xxxx Detergents

Criterion name		surfactants	preservatives	colouring agents	fragrances	other
Toxicity to aquatic organisms		≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Biodegradability	Surfactants	≥ 0,010	x	x	x	x
	Organics	≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010

Sustainable sourcing of palm oil		≥ 0,010	x	x	x	x
Excluded or limited substances and mixtures	Specified excluded and limited subst.	no limit*	no limit*	no limit*	no limit*	no limit*
	Hazardous subst.	≥0,010	≥0,010	≥0,010	≥0,010	≥0,010
	SVHCs	no limit*	no limit*	no limit*	no limit*	no limit*
	Fragrances	x	x	x	no limit*	x
	Preserva-tives	x	no limit*	x	x	x
	Colourants	x	x	no limit*	x	x
	Enzymes	x	x	x	x	≥ 0,010

* "no limit" means: regardless of the concentration, all substances intentionally added, by-products and impurities from raw materials (analytical limit of detection)

3.4 Reference dosage

The following dosage is taken as the reference dosage for the calculations aiming at documenting compliance with the EU Ecolabel criteria and for testing of cleaning ability:

Worst-case dosage recommended by the manufacturer to wash one kilogram of dry laundry (indicated in g/kg laundry or ml/kg laundry). The worst-case scenario is considered to be the worst soiling acceptable for clothes (see classification in table below) and the maximum water hardness found at the location where the product is marketed. All products in a multi-component system must be included with the worst case dosage when assessments of the criteria are made.

Examples of degree of soiling:

Light	Medium	Heavy
Hotel: bed-linen, bedclothes and towels, etc. (towels may be considered heavily soiled) Cloth hand towel rolls	Work clothes: institutions/retail/service, etc. Restaurants: table-cloths, napkins, etc. Mops and mats	Work clothes: industry/kitchen/butchering, etc. Kitchen textiles: clothes, dish towels, etc. Institutions as hospitals: bed-linen, bedclothes, contour sheets, patient clothing, doctor's coat or coatdress, etc.

Assessment and verification:

The applicant shall provide the product label or Safety Data sheet that includes the dosing instructions.

3.5 Criteria for industrial and institutional laundry detergents

3.5.1 Criterion 1: Toxicity to aquatic organisms

The critical dilution volume (CDV) of the product must not exceed the following limits for the reference dosage:

Soft water (<1,5 mmol CaCO3/L)			
Degree of soiling / Product type	Light	Medium	Heavy
Powder	30 000	40 000	50 000
Liquid	50 000	60 000	70 000
Multi-component-system	50 000	70 000	90 000

Medium water (1,5 – 2,5 mmolCaCO3/L)			
Degree of soiling / Product type	Light	Medium	Heavy
Powder	40 000	60 000	80 000
Liquid	60 000	75 000	90 000
Multi-component-system	60 000	80 000	100 000

Hard water (> 2,5 mmol CaCO3/L)			
Degree of soiling / Product type	Light	Medium	Heavy
Powder	50 000	75 000	90 000
Liquid	75 000	90 000	120 000
Multi-component-system	75 000	100 000	120 000

Assessment and verification:

The applicant shall provide the calculation of the CDV of the product. A spreadsheet for calculating of the CDV value is available on the EU Ecolabel website.
The CDV is calculated for all ingoing substances (i) in the product using the following equation:

$$CDV = \sum CDV(i) = 1000 \cdot \sum dosage(i) \cdot \frac{DF(i)}{TF(i)}$$

Where:
dosage(i): weight (g) of the substance or mixture i in the reference dose,
DF(i): degradation factor for the substance or mixture i
TF(i): toxicity factor for the substance or mixture i
The values of DF(i) and TF(i) shall be as given in the DID list Part A (Appendix I). If an ingoing substance is not included in the DID list Part A, the applicant shall estimate the values following the approach described in the DID list Part B (Appendix I).

Because of the degradation of certain substances in the wash process, separate rules apply to the following:
hydrogen peroxide (H2O2) – not to be included in calculation of CDV
peracetic acid – to be included in the calculation as acetic acid.

3.5.2 Criterion 2: Biodegradability

(a) Biodegradability of surfactants

All surfactants shall be readily degradable (aerobically).

All surfactants classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable.

(b) Biodegradability of organic compounds

The content of organic substances in the product that are aerobically non-biodegradable (not readily biodegradable aNBO) or anaerobically non-biodegradable (anNBO) shall not exceed the following limits for a reference dosage:

aNBO (g/kg laundry)

Soft water (<1,5 mmol CaCO3/L)			
Degree of soiling / Product type	Light	Medium	Heavy
Powder	0,70	1,10	1,40
Liquid	0,50	0,60	0,70
Multi-component-system	1,25	1,75	2,50

Medium water (1,5 – 2,5 mmolCaCO3/L)			
Degree of soiling / Product type	Light	Medium	Heavy
Powder	1,10	1,40	1,75
Liquid	0,60	0,70	0,90
Multi-component-system	1,75	2,50	3,75

Hard water (> 2,5 mmol CaCO3/L)			
Degree of soiling / Product type	Light	Medium	Heavy
Powder	1,40	1,75	2,20
Liquid	0,70	0,90	1,20
Multi-component-system	2,50	3,75	4,80

anNBO (g/kg laundry)

Soft water (<1,5 mmol CaCO3/L)			
Degree of soiling / Product type	Light	Medium	Heavy
Powder	0,70	1,10	1,40
Liquid	0,50	0,60	0,70
Multi-component-system	1,25	1,75	2,50

Medium water (1,5 – 2,5 mmolCaCO3/L)			
Degree of soiling / Product type	Light	Medium	Heavy
Powder	1,10	1,40	1,75
Liquid	0,60	0,70	0,90
Multi-component-system	1,75	2,50	3,75

Hard water (> 2,5 mmol CaCO3/L)			
Degree of soiling / Product type	Light	Medium	Heavy
Powder	1,40	1,75	2,20
Liquid	0,70	0,90	1,20
Multi-component-system	2,50	3,75	4,80

Assessment and verification:

The applicant shall provide documentation for the degradability of surfactants, as well as the calculation of aNBO and anNBO for the product. A spreadsheet for calculating aNBO and anNBO values is available on the EU Ecolabel website.

For both surfactants and aNBO and anNBO values, reference shall be done to the DID list.

For ingoing substances which are not included in the DID list, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided as described in the Appendix x, which is available on the EU Ecolabel website.

In the absence of documentation in accordance with the above requirements, an ingoing substance other than a surfactant may be exempted from the requirement for anaerobic degradability if one of the following three alternatives is fulfilled:

1. Readily degradable and has low adsorption (A < 25 %);
2. Readily degradable and has high desorption (D > 75 %);
3. Readily degradable and non-bioaccumulating.

Testing for adsorption/desorption may be conducted in accordance with OECD guidelines 106.

3.5.3 Criterion 3: Sustainable sourcing of palm oil, palm kernel oil and their derivatives

Ingoing substances used in the products which are derived from palm oil or palm kernel oil shall be sourced from plantations that meet the criteria for sustainable management that have been developed by multi-stakeholder organisations that have a broad membership including NGOs, industry and government.

Assessment and verification:

The applicant shall provide third-party certifications that the palm oil and palm kernel oil used in the manufacturing of the product originates from sustainably managed plantations. Certifications accepted shall include RSPO (by identity preserved, segregated or mass balance) or any equivalent scheme based on multi-stakeholder sustainable management criteria. For chemical derivatives of palm oil and palm kernel oil, it is acceptable to demonstrate sustainability through book and claim systems such as GreenPalm or equivalent.

3.5.4 Criterion 4: Excluded and restricted substances

3.5.4.1 Sub-criterion (a): Specified excluded and restricted ingoing substances

(i) Excluded substances

Substances indicated in Table 47 shall not be included in the product formulation:

Table 47. List of substances excluded from detergents and cleaning products regardless of concentration

- APEO and ADP
- Atranol
- Chloroatranol
- Diazolinidylurea
- DTPA
- EDTA
- Formaldehyde
- Hydroxyisohexyl 3-cyclohexene carboxaldehyde (HICC)
- Microplastics
- Nanosilver
- Nitromusks and polycyclic musks
- Phosphates
- Per-fluorinated alkylates
- Quaternary ammonium salts not readily biodegradable
- Reactive chlorine compounds
- Sodium hydroxyl methyl glycinate
- Triclosan
- 5-bromo-5-nitro-1,3-dioxane
- 2-bromo-2-nitropropane-1,3-diol

(ii) Restricted substances

Substances listed below shall not be included in the product formulation above the specified mass concentration:
- The total content of phosphorus compounds in the product is limited to:

- - 0.5Pg/kg laundry (dry weight) for light soil
- - 1.0Pg/kg laundry (dry weight) for medium soil
- - 1.5Pg/kg laundry (dry weight) for heavy soil

- Fragrance substances subject to the declaration requirement provided in Detergents Regulation (EC) No 684/2004 shall not be present in quantities ≥ 0,010 % (≥ 100 ppm) per substance

Assessment and verification:

The applicant shall provide:

- a signed declaration of compliance supported by declarations from suppliers, if appropriate, confirming that the listed substances have not been included in the product formulation, either regardless of mass concentration (substances listed in (i)) or above specified concentration (substances listed in (ii)),

- for phosphorus: a) information on the complexing agent in the product (detail information of the type of phosphorus-containig substances added as ingredients), b) calculation of the product's total P-content.

3.5.4.2 Sub-criterion (b): Hazardous substances

The final product shall not be classified and labelled as being acutely toxic, a specific target organ toxicant, a respiratory or skin sensitiser, carcinogenic, mutagenic or toxic for reproduction, or hazardous to the environment, in accordance with CLP Regulationa.

The product shall not contain ingoing substances meeting the criteria for classification as toxic, hazardous to the environment, respiratory or skin sensitizers, carcinogenic, mutagenic or toxic for reproduction in accordance with CLP Regulationa and as interpreted according to the hazard statements listed in Table 57.

Any ingoing substance present at a concentration above 0,010% w/w in the product shall meet this requirement. Where stricter, the generic or specific concentration limits determined in accordance with Article 10 of CLP Regulation shall prevail to the cut-off limit value of 0,010% w/w.

Table 57. Restricted hazard classifications and their categorisation

Acute toxicity	
Category 1 and 2	**Category 3**
H300 Fatal if swallowed	H301 Toxic if swallowed
H310 Fatal in contact with skin	H311 Toxic in contact with skin
H330 Fatal if inhaled	H331 Toxic if inhaled
H304 May be fatal if swallowed and enters airways	EUH070 Toxic by eye contact
Specific target organ toxicity	
Category 1	**Category 2**
H370 Causes damage to organs	H371 May cause damage to organs
H372 Causes damage to organs through prolonged or repeated exposure	H373 May cause damage to organs through prolonged or repeated exposure
Respiratory and skin sensitisation	
Category 1A	**Category 1B**
H317: May cause allergic skin reaction	H317: May cause allergic skin reaction
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	**Category 2**
H340 May cause genetic defects	H341 Suspected of causing genetic defects
H350 May cause cancer	H351 Suspected of causing cancer
H350i May cause cancer by inhalation	
H360F May damage fertility	H361f Suspected of damaging fertility
H360D May damage the unborn child	H361d Suspected of damaging the unborn child
H360FD May damage fertility. May damage the unborn child	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child
H360Fd May damage fertility. Suspected of damaging the unborn child	H362 May cause harm to breast fed children
H360Df May damage the unborn child. Suspected of damaging fertility	
Hazardous to the aquatic environment	
Category 1 and 2	**Category 3 and 4**
H400 Very toxic to aquatic life	H412 Harmful to aquatic life with long-lasting effects
H410 Very toxic to aquatic life with long-lasting effects	H413 May cause long-lasting effects to aquatic life
H411 Toxic to aquatic life with long-lasting effects	
Hazardous to the ozone layer	
H420 Hazardous to the ozone layer	

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications in accordance with article 15 of CLP Regulationa. The hazard statements generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall apply.

Ingoing substances which change their properties upon processing (e.g. become no longer bioavailable or undergo chemical modification) so that the hazards no longer apply and that any unreacted residual content of the hazardous substances is less than 0,010% w/w are exempted from this criterion x(b).

This criterion does not apply to ingoing substances covered by Article 2(7)(b) of the REACHb which sets out criteria for exempting substances within Annex V from the registration, downstream user and evaluation requirements. In order to determine if this exclusion applies, the applicant shall screen any ingoing substance present at a concentration above 0,010% w/w.

Substances and mixtures included in Table 6 are exempted from the requirement of this criterion.

Table 6. Derogated substances

Substance	Hazard statement
Surfactants in total concentrations <15% in the final product	H400: Very toxic to aquatic life
Surfactants in total concentrations <15% in the final product	H412: Harmful to aquatic life with long-lasting effects
Subtilisin	H400: Very toxic to aquatic life H411: Toxic to aquatic life with long-lasting effects
Enzymes(*)	H317: May cause allergic skin reaction
	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
6-(phthalimido)peroxyhexanoic acid (PAP) as bleaching agent at max concentration of 0.6 g/kg laundry	H400: Very toxic to aquatic life H412: Harmful to aquatic life with long-lasting effects
Peracetic acid/hydrogen peroxide bleaching agent	H400: Very toxic to aquatic life H410: Very toxic to aquatic life with long-lasting effects
NTA as an impurity in MGDA and GLDA(**)	H351: Suspected of causing cancer
Fragrances	H412: Harmful to aquatic life with long-lasting effects
Preservatives	[Consultation ongoing]

(*) Including stabilisers and other auxiliary substances in the preparations

(**) In concentrations lower than 0.2 % in the raw material as long as the total concentration in the final product is lower than 0.10 %.

Assessment and verification:

The applicant shall demonstrate compliance with criterion x(b) for the final product and for any ingoing substance present at concentrations greater than 0,010 % in weight in the final product. A declaration of compliance shall be provided by the applicant supported, where appropriate, by the declarations from their supplier(s) that none of these substances meets the criteria for classification with one or more of hazard statements listed in Table 57 in the form(s) and physical state(s) they are present in the final product. Material safety data sheet for the final product shall also be provided.

The following technical information related to the form(s) and physical state(s) of the ingoing substances as present in the product shall be provided to support the declaration of non-classification:

(i) For substances that have not been registered under REACH and/or which do not yet have a harmonised CLP classification: Information meeting the requirements listed in Annex VII to REACH;

(ii) For substances that have been registered under REACH and which do not meet the requirements for CLP classification: Information based on the REACH registration dossier confirming the non- classified status of the substance;

(iii) For substances that have a harmonised classification or are self-classified: safety data sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to REACH;

(iv) In the case of mixtures: safety data sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under CLP Regulation together with information relevant to the mixtures hazard classification according to Annex II to REACH.

For substances listed in Annexes IV and V to REACH, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of REACH, a declaration to this effect by the applicant shall suffice to comply with criterion x(b).

A declaration on the presence of ingoing substances that fulfil the derogation conditions shall be provided by the applicant, supported, where appropriate, by declarations from their supplier(s). Where required for the derogation, the applicant shall confirm the concentrations of these substances in the final product.

3.5.4.3 Sub-criterion (c): Substances of very high concern (SVHCs)

The final product shall not contain any ingoing substances that have been identified according to the procedure described in Article 59(1) of REACH, which establishes the candidate list for substances of very high concern.

Assessment and verification:
The applicant shall provide a declaration of compliance, supported by declarations from their suppliers, as appropriate, on non-presence of the candidate list substances.
Reference to the latest list of substances of very high concern shall be made on the date of application.

3.5.4.4 Sub-criterion (d): Fragrances

Any ingoing substance added to the product as a fragrance shall be manufactured and handled following the code of practice of the International Fragrance Association (IFRA) available at http://www.ifraorg.org. The recommendations of the IFRA Standards concerning prohibition, restricted use and specified purity criteria for substances shall be followed by the manufacturer.

Assessment and verification:

The applicant, their supplier or fragrance manufacturer, as appropriate, shall provide a signed declaration of compliance.

3.5.4.5 Sub-criterion (e): Preservatives

(i) The product may only include preservatives in order to preserve the product, and in the appropriate dosage for this purpose alone. This does not refer to surfactants, which may also have biocidal properties.

(ii) The product may contain preservatives provided that they are not bio-accumulating. A preservative is considered to be not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used.

(iii) It is prohibited to claim or suggest on the packaging or by any other communication that the product has an antimicrobial or disinfecting effect.

Assessment and verification:
The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any preservative added, and information on its BCF and/or log Kow values. The applicant shall provide also artwork of the packaging.

3.5.4.6 Sub-criterion (f): Colouring agents

Colouring agents in the product shall not be bio-accumulating.

A colouring agent is considered not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used. In the case of colouring agents approved for use in food, it is not necessary to submit documentation of bio-accumulation potential.

Assessment and verification:
The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any colorant added together with information on its BCF and/or log Kow value, or documentation to ensure that the colouring agent is approved for use in food.

3.5.4.7 Sub-criterion (g): Enzymes

Only enzyme encapsulates (in solid form) and enzyme liquids/slurries shall be used.

Assessment and verification:
The applicant shall provide a declaration of compliance supported by copies of the safety data sheets of any enzyme added.

3.5.5 Criterion 5: Packaging

(a) *Weight/utility ratio (WUR)*

The weight/utility ratio (WUR) of the product shall be calculated for the primary packaging only and shall not exceed the following values for the reference dosage:

Water hardness / Product type	Soft	Medium	Hard
	<1,5 mmol CaCO3/l	1.5 – 2,5 mmol CaCO3/l	> 2,5 mmol CaCO3/l
Powders	1,5	2,0	2,5
Liquids	2,0	2,5	3,0

Plastic/paper/cardboard packaging containing more than 80 % recycled materials is exempted from this requirement.

Assessment and verification:
The applicant shall provide the calculation of the WUR of the product. If the product is sold in different packaging (i.e. with different volumes), the calculation shall be submitted for each packaging size for which the EU Ecolabel shall be awarded. In the case of trigger sprays and the allocation of weight to the primary packaging, this shall be on the basis of pan-European sales data for the product, indicating unit sales of each. The WUR is calculated as follows:

$$WUR = \sum((W_i + U_i)/(D_i * R_i)$$

Where:

Wi: weight (g) of the primary packaging (i),
Ui: weight (g) of non-recycled packaging in the primary packaging (i). Ui = Wi unless the applicant can document otherwise,

Di: number of reference doses contained in the primary packaging (i),
Ri: number of times that the primary packaging (i) can be refilled and used for the same purpose. Ri = 1 (packaging is not reused for the same purpose) unless the applicant can document a higher number.

The applicant shall provide a signed declaration for the content of recycled material, along with relevant documentation. Packaging is regarded as recycled if the raw material used to make the packaging has been collected from packaging manufacturers at the distribution stage or at the consumer stage. Where the raw material is industrial waste from the material manufacturer's own production process, then the material will not be regarded as recycled.

(b) *Design for recycling*

Plastic packaging shall be designed to facilitate effective recycling by avoiding potential contaminants and incompatible materials that are known to impede separation or reprocessing or to reduce the quality of recyclate. The label or sleeve, closure and, where applicable, barrier coatings shall not comprise, either singularly or in combination the materials and components listed in Table 72. Pumps are exempted from this requirement.

Table 72. Materials and components excluded from packaging elements

Packaging element	Excluded materials and components*
Label or sleeve	- PS label or sleeve in combination material used with a PET, PP or HDPE bottle - PVC label or sleeve in combination with a PET, PP or HDPE bottle - PETG label or sleeve in combination with a PET bottle - Sleeves made of different polymer than the bottle - Labels or sleeves that are metallised or are welded to a packaging body (in mould labelling)

Closure	- PS closure in combination a with a PET, HDPE or PP bottle - PVC closure in combination with a PET, PP or HDPE bottle - PETG closures and/or closure material with density of above 1 g/cm3 in combination with a PET bottle - Closures made of metal, glass, EVA - Closures made of silicone. Exempted are silicone closures with a density < 1 g/cm3 in combination with a PET bottle and silicone closures with a density > 1g/cm3 in combination with PEHD or PP bottle - Metallic foils or seals which remain fixed to the bottle or its closure after the product has been opened
Barrier coatings	Polyamide, EVOH, functional polyolefins, metallised and light blocking barriers

* EVA – Ethylene Vinyl Acetate, EVOH – Ethylene vinyl alcohol, HDPE – High-density polyethylene, PET – Polyethylene terephtalate, PETG – Polyethylene terephthalate glycol-modified, PP – Polypropylene, PS – Polystyrene, PVC – Polyvinylchloride

Assessment and verification:
The applicant shall submit a signed declaration of compliance specifying the material composition of the packaging including the container, label or sleeve, adhesives, closure and barrier coating, as appropriate, and a sample of primary packaging.

3.5.6 Criterion 6: Fitness for use

A user test should be used to document the washing primary laundering effects of the detergent. The user test should meet the requirements stated in Appendix II. For user test the following apply:

- The test product must be tested against a reference product.
- The reference product may be a well-established product on the market or the product normally used by the user.
- The test product must show efficiency equal to or better than the reference product.

Assessment and verification

The applicant shall provide a test report providing information on:

(a) Information about the test centres where the detergent was tested and how/why they represent a selection of customers.

(b) Information about the products usually used by the test centres (reference products): recommended dosage, washing temperature, product's ability to remove soiling, date of purchase

(c) Information about the test procedure: type of spots and type of textile, information about the professional washing machines and washing programs (eg temperature, duration, rinsing, etc), and the effectiveness of other products the detergent shall be used with (eg. Rinseaids)

(d) all reply forms received from the test users and the overall result on the wash performance of detergent specified in a table/a form. The overall result must be rated in accordance with point 6 of Appendix II

(e) Information on how satisfied the test centre is with visit reporting arrangements and the categories rated (point 5 of Appendix II

Appendix II User test

1) Responses must be obtained from at least five test centres representing a selection of customers
The procedure and dosage must conform to the manufacturer's recommendations.
The test period must continue for at least four weeks.
Every test centre must assess the serviceability of the product or multi-component system, dosability, compressibility, rinsing and solubility.
Every test centre must assess the effectiveness of the product or multi-component system by answering questions relating to the following aspects (or similar formulations):

a) ability to launder lightly, moderately or heavily soiled articles to be washed;
b) an assessment of primary laundering effects such as dirt removal, stain removal capacity and c) bleaching effect must be rated;
d) assessment of secondary laundering effects such as greying of white washing and colour-fastness and staining of coloured washing;
e) assessment of the effect of the rinsing agent on drying, ironing or mangling of the articles to be washed;
f) how satisfied
G) the test subject is with customer visiting arrangements

The response must be rated on a scale comprising at least three levels, for example, 'insufficiently effective', 'sufficiently effective' or 'very effective'. With regard to how satisfied the test centre is with visit reporting arrangements, the categories must be 'not satisfied', 'satisfied' and 'very satisfied'.
At least five test centres must submit responses. At least 80 % must rate the product as sufficiently effective or very effective on all points (see point 4 and be satisfied or very satisfied with customer visiting arrangements)
All raw data from the test must be specified The test procedure must be described in detail.

1. Responses must be obtained from at least five test centres representing a selection of customers
2. The procedure and dosage must conform to the manufacturer's recommendations.
3. The test period must continue for at least four weeks.
4. Every test centre must assess the serviceability of the product or multi-component system, dosability, compressibility, rinsing and solubility.
5. Every test centre must assess the effectiveness of the product or multi-component system by answering questions relating to the following aspects (or similar formulations):

a) ability to launder lightly, moderately or heavily soiled articles to be washed;
b) an assessment of primary laundering effects such as dirt removal, stain removal capacity and bleaching effect must be rated;
c) assessment of secondary laundering effects such as greying of white washing and colour-fastness and staining of coloured washing;
d) assessment of the effect of the rinsing agent on drying, ironing or mangling of the articles to be washed;
e) how satisfied
f) the test subject is with customer visiting arrangements

6. The response must be rated on a scale comprising at least three levels, for example, 'insufficiently effective', 'sufficiently effective' or 'very effective'. With regard to how satisfied the test centre is with visit reporting arrangements, the categories must be 'not satisfied', 'satisfied' and 'very satisfied'.
7. At least five test centres must submit responses. At least 80 % must rate the product as sufficiently effective or very effective on all points (see point 4 and be satisfied or very satisfied with customer visiting arrangements)
8. All raw data from the test must be specified The test procedure must be described in detail.

3.5.7 Criterion 7: Automatic dosing systems

For multi-component systems, the applicant shall ensure that the product is used with an automatic and controlled dosing system.
In order to ensure correct dosage in the automatic dosing systems, customer visits shall be performed at all premises using the product, at least once a year during the license period, and they shall include calibration of the dosing equipment. A third party can perform these customer visits.

Assessment and verification:
The applicant shall provide a written description of responsibility for, frequency and content of customer visits.

3.5.8 Criterion 8: User information

The detergent shall be accompanied by instructions for proper use so as to maximise product performance and minimise waste and use of resources. These instructions shall be legible or include graphical representation or icons and include information on (if appropriate):

(a) dosing instructions

The applicant shall take suitable steps to help consumers respect the recommended dosage, making available the dosing instructions and if possible a convenient dosage system (e.g. caps). Dosing instruction shall include information on the recommended dosage in g or ml and a second or alternative metric may be given in brackets (e.g. capsules, squirts, or other if the packaging has a dosage system). Recommended dosage for a standard load for at least two levels of soiling shall be included. Information on the impact of water hardness on dosing and indications of the most prevalent water hardness in the area where the product is intended to be marketed or where this information can be found shall be provided.

(b) resource saving measures

The applicant shall recommend washing at the lowest temperature the product claims effectiveness and washing with full loads.

(c) packaging disposal information

The primary packaging shall include information on the reuse, recycling and/or correct disposal of packaging.

(d) environmental information

The following text should appear on the primary packaging: *"All detergents have an effect on the environment. For maximum effectiveness always use the correct dose and, the lowest recommended temperature. This will minimize both energy and water consumption and reduce water pollution"*.

Assessment and verification:
The applicant shall provide a declaration of compliance together wirh a sample of the product packaging, including the label.

3.5.9 Criterion 9: Information appearing on the EU Ecolabel

The logo should be visible and legible. The EU Ecolabel registration/licence number must appear on the product and it must be legible and clearly visible. Optional label with text box shall contain the following text:

— Harm to aquatic life is limited
— Amount of hazardous substances is restricted
— Tested for wash performance
Assessment and verification:

The applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a signed declaration of compliance.

4 PROPOSED EU ECOLABEL CRITERIA FOR DETERGENTS FOR DISHWASHERS

4.1 Name, scope and definition

The product group 'Dishwasher Detergents' shall comprise any detergent for dishwashers or rinse aids falling under the scope of Regulation (EC) No 648/2004 on detergents which are intended to be marketed and used exclusively in household dishwashers and in automatic dishwashers for professional use, the size and usage of which is similar to that of household dishwashers.

4.2 Definitions

(1) "ingoing substances" means substances intentionally added, by-products and impurities from raw materials in the final product formulation (including water-soluble foil, if applicable);

(2) "primary packaging" means

- for single doses in a wrapper that is intended to be removed before washing, the individual dose wrapping in direct contact with the content and the packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase, including label where applicable;

- for all other types of products, packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase in direct contact with the content, including label where applicable;

(3) "microplastics" means plastic micro beads used as a scrub/abrasive material in detergent and cleaning products.

4.3 Assessment and verification requirements and measurement thresholds

A) Requirements

The specific assessment and verification requirements are indicated within each criterion.
Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or their supplier(s) as appropriate.

Competent Bodies shall preferentially recognise attestations which are issued by bodies accredited according to the relevant harmonised standard for testing and calibration laboratories and verifications by bodies that are accredited according to the relevant harmonised standard for bodies certifying products, processes and services.

Where appropriate, test methods other than those indicated for each criterion may be used if the Competent Body assessing the application accepts their equivalence.
Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications.

As pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

The Appendix I makes reference to the "Detergent Ingredient Database" list (DID list) which contains the most widely used ingoing substances in detergents and cosmetics formulations. It shall be used for deriving the data for the calculations of the Critical Dilution Volume (CDV) and for the assessment of the biodegradability of the ingoing substances. For substances not present on the DID list, guidance is given on how to calculate or extrapolate the relevant data. The latest version of the DID list is available from the EU Ecolabel website or via the websites of the individual competent bodies.
The following information shall be provided to the competent body:

(i) The list of all ingoing substances indicating trade name, chemical name, CAS no., DID no., the ingoing quantity, the function and the form present in the final product formulation (including foil) at or above the following concentrations:
- preservatives, fragrances and colouring agents - regardless of concentration,
- other ingoing substances - 0,010% by weight;

For each ingoing substance listed, the safety data sheet in accordance with Regulation (EC) No 1907/2006 of the European Parliament and of the Council shall be provided.
(ii) If a supplier prefers not to disclose the ingoing substances included in a mixture to the applicant, the information can be sent directly to the Competent Body by the supplier;
(iii) In exceptional cases, if the ingoing substances included in a mixture are unknown, the applicant can supply the information requested in (i) for the mixture.

B) Measurement thresholds

Compliance with the ecological criteria is required for all ingoing substances as specified in Table 18.

Table 18. Threshold levels applicable to ingoing substances by criterion for xxxx Detergents

Criterion name		surfactants	preservatives	colouring agents	fragrances	other
Toxicity to aquatic organisms		≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Biodegradability	Surfactants	≥ 0,010	x	x	x	x
	Organics	≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Sustainable sourcing of palm oil		≥ 0,010	x	x	x	x

Excluded or limited substances and mixtures	Specified excluded and limited subst.	no limit*	no limit*	no limit*	no limit*	no limit*
	Hazardous subst.	≥0,010	≥0,010	≥0,010	≥0,010	≥0,010
	SVHCs	no limit*	no limit*	no limit*	no limit*	no limit*
	Fragrances	x	x	x	no limit*	x
	Preserva-tives	x	no limit*	x	x	x
	Colourants	x	x	no limit*	x	x
	Enzymes	x	x	x	x	≥ 0,010

* "no limit" means: regardless of the concentration, all substances intentionally added, by-products and impurities from raw materials (analytical limit of detection)

4.4 Reference dosage

The following dosage is taken as the reference dosage for the calculations aiming at documenting compliance with the EU Ecolabel criteria and for testing of cleaning ability:

Dishwasher detergent	Dosage recommended by the manufacturer to wash 12 normally soiled place settings under standard conditions ("wash"), as laid down in the IKW washing performance test referred to in Criterion 6 (indicated in g/wash or ml/wash).
Rinse aid	3 ml

4.5 Critera for dishwasher detergents

4.5.1 Criterion 1: Dosage requirements

The reference dosage shall not exceed the following amounts:

Product type	Dosage
Single-function dishwasher detergent	19,0 g/wash
Multi-function dishwasher detergent	21,0 g/wash

Rinse aids are exempted from this requirement.

Assessment and verification:
The applicant shall provide the product label that includes the dosing instructions and documentation showing the density (g/ml) of liquid products.

4.5.2 Criterion 2: Toxicity to aquatic organisms

The critical dilution volume (CDV) of the product must not exceed the following limits for the reference dosage:

Product type	Limit CDV
Single-function dishwasher detergents	20 000 l/wash
Multi-function dishwasher detergents	24 000 l/wash
Rinse aid	7 500 l/wash

Assessment and verification:

The applicant shall provide the calculation of the CDV of the product. A spreadsheet for calculating of the CDV value is available on the EU Ecolabel website.
The CDV is calculated for all ingoing substances (i) in the product using the following equation:

$$CDV = \sum CDV(i) = 1000 \cdot \sum dosage(i) \cdot \frac{DF(i)}{TF(i)}$$

Where:
dosage(i): weight (g) of the substance or mixture i in the reference dose,
DF(i): degradation factor for the substance or mixture i
TF(i): toxicity factor for the substance or mixture i
The values of DF(i) and TF(i) shall be as given in the DID list Part A (Appendix I). If an ingoing substance is not included in the DID list Part A, the applicant shall estimate the values following the approach described in the DID list Part B (Appendix I).

4.5.3 Criterion 2: Biodegradability

(a) Biodegradability of surfactants

All surfactants shall be readily degradable (aerobically).

All surfactants classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable.

(b) Biodegradability of organic compounds

The content of organic substances in the product that are aerobically non-biodegradable (not readily biodegradable aNBO) or anaerobically non-biodegradable (anNBO) shall not exceed the following limits for a reference dosage:

Product type	aNBO	anNBO
Dishwasher detergents	1,0 g/wash	3,0 g/wash
Rinse aids	0,15 g/wash	0,50 g/wash

Assessment and verification:
The applicant shall provide documentation for the degradability of surfactants, as well as the calculation of aNBO and anNBO for the product. A spreadsheet for calculating aNBO and anNBO values is available on the EU Ecolabel website.
For both surfactants and aNBO and anNBO values, reference shall be done to the DID list.
For ingoing substances which are not included in the DID list, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided as described in the Appendix x, which is available on the EU Ecolabel website.
In the absence of documentation in accordance with the above requirements, an ingoing substance other than a surfactant may be exempted from the requirement for anaerobic degradability if one of the following three alternatives is fulfilled:

1. Readily degradable and has low adsorption (A < 25 %);
2. Readily degradable and has high desorption (D > 75 %);
3. Readily degradable and non-bioaccumulating.

Testing for adsorption/desorption may be conducted in accordance with OECD guidelines 106.

4.5.4 Criterion 3: Sustainable sourcing of palm oil, palm kernel oil and their derivatives

Ingoing substances used in the products which are derived from palm oil or palm kernel oil shall be sourced from plantations that meet the criteria for sustainable management that have been developed by multi-stakeholder organisations that have a broad membership including NGOs, industry and government.

Assessment and verification:
The applicant shall provide third-party certifications that the palm oil and palm kernel oil used in the manufacturing of the product originates from sustainably managed plantations. Certifications accepted shall include RSPO (by identity preserved, segregated or mass balance) or any equivalent scheme based on multi-stakeholder sustainable management criteria. For chemical derivatives of palm oil and palm kernel oil, it is acceptable to demonstrate sustainability through book and claim systems such as GreenPalm or equivalent.

4.5.5 Criterion 4: Excluded and restricted substances

4.5.5.1 Sub-criterion (a): Specified excluded and restricted substances

(i) Excluded substances

Substances indicated in Table 47 shall not be included in the product formulation:

Table 47. List of substances excluded from detergents and cleaning products regardless of concentration

- APEO and ADP
- Atranol
- Chloroatranol
- Diazolinidylurea
- DTPA
- EDTA
- Formaldehyde
- Hydroxyisohexyl 3-cyclohexene carboxaldehyde (HICC)
- Microplastics
- Nanosilver
- Nitromusks and polycyclic musks
- Phosphates
- Per-fluorinated alkylates
- Quaternary ammonium salts not readily biodegradable
- Reactive chlorine compounds
- Sodium hydroxyl methyl glycinate
- Triclosan
- 5-bromo-5-nitro-1,3-dioxane
- 2-bromo-2-nitropropane-1,3-diol

(ii) Restricted substances

Substances listed below shall not be included in the product formulation above the specified mass concentration:

- The total content of phosphorus compounds in the product is limited to:
- 0,20 Pg/wash for dishwasher detergents and
- 0,30 Pg/wash rinsing agents

- Fragrance substances subject to the declaration requirement provided in Detergents Regulation (EC) No 684/2004 shall not be present in quantities ≥ 0,010 % (≥ 100 ppm) per substance

Assessment and verification:
The applicant shall provide:
- a signed declaration of compliance supported by declarations from suppliers, if appropriate, confirming that the listed substances have not been included in the product formulation, either regardless of mass concentration (substances listed in (i)) or above specified concentration (substances listed in (ii)),
- for phosphorus: a) information on the complexing agent in the product (detail information of the type of phosphorus-containig substances added as ingredients), b) calculation of the product's total P-content.

4.5.5.2 Sub-criterion (b): Hazardous substances

The final product shall not be classified and labelled as being acutely toxic, a specific target organ toxicant, a respiratory or skin sensitiser, carcinogenic, mutagenic or toxic for reproduction, or hazardous to the environment, in accordance with CLP Regulationa.

The product shall not contain ingoing substances meeting the criteria for classification as toxic, hazardous to the environment, respiratory or skin sensitizers, carcinogenic, mutagenic or toxic for reproduction in accordance with CLP Regulationa and as interpreted according to the hazard statements listed in Table 57.

Any ingoing substance present at a concentration above 0,010% w/w in the product shall meet this requirement. Where stricter, the generic or specific concentration limits determined in accordance with Article 10 of CLP Regulation shall prevail to the cut-off limit value of 0,010% w/w.

Table 57. Restricted hazard classifications and their categorisation

Acute toxicity	
Category 1 and 2	**Category 3**
H300 Fatal if swallowed	H301 Toxic if swallowed
H310 Fatal in contact with skin	H311 Toxic in contact with skin
H330 Fatal if inhaled	H331 Toxic if inhaled
H304 May be fatal if swallowed and enters airways	EUH070 Toxic by eye contact
Specific target organ toxicity	
Category 1	**Category 2**
H370 Causes damage to organs	H371 May cause damage to organs
H372 Causes damage to organs through prolonged or repeated exposure	H373 May cause damage to organs through prolonged or repeated exposure
Respiratory and skin sensitisation	
Category 1A	**Category 1B**
H317: May cause allergic skin reaction	H317: May cause allergic skin reaction
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	**Category 2**
H340 May cause genetic defects	H341 Suspected of causing genetic defects
H350 May cause cancer	H351 Suspected of causing cancer
H350i May cause cancer by inhalation	
H360F May damage fertility	H361f Suspected of damaging fertility
H360D May damage the unborn child	H361d Suspected of damaging the unborn child
H360FD May damage fertility. May damage the unborn child	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child
H360Fd May damage fertility. Suspected of damaging the unborn child	H362 May cause harm to breast fed children
H360Df May damage the unborn child. Suspected of damaging fertility	
Hazardous to the aquatic environment	
Category 1 and 2	**Category 3 and 4**
H400 Very toxic to aquatic life	H412 Harmful to aquatic life with long-lasting effects
H410 Very toxic to aquatic life with long-lasting effects	H413 May cause long-lasting effects to aquatic life
H411 Toxic to aquatic life with long-lasting effects	
Hazardous to the ozone layer	
H420 Hazardous to the ozone layer	

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications in accordance with article 15 of CLP Regulationa. The hazard statements generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall apply.

Ingoing substances which change their properties upon processing (e.g. become no longer bioavailable or undergo chemical modification) so that the hazards no longer apply and that any unreacted residual content of the hazardous substances is less than 0,010% w/w are exempted from this criterion x(b).

This criterion does not apply to ingoing substances covered by Article 2(7)(b) of the REACHb which sets out criteria for exempting substances within Annex V from the registration, downstream user and evaluation requirements. In order to determine if this exclusion applies, the applicant shall screen any ingoing substance present at a concentration above 0,010% w/w.

Substances and mixtures included in Table 7 are exempted from the requirement of this criterion.

Table 7. Derogated substances

Substance	Hazard statement
Surfactants in total concentrations <25% in the final product	H400: Very toxic to aquatic life
	H412: Harmful to aquatic life with long-lasting effects
Subtilisin	H400: Very toxic to aquatic life H411: Toxic to aquatic life with long-lasting effects
Enzymes(*)	H317: May cause allergic skin reaction
	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
NTA as an impurity in MGDA and GLDA(**)	H351: Suspected of causing cancer
Fragrances	H412: Harmful to aquatic life with long-lasting effects
Preservatives	[Ongoing consultation]

(*) Including stabilisers and other auxiliary substances in the preparations

(**) In concentrations lower than 0,2 % in the raw material as long as the total concentration in the final product is lower than 0,10 %.

Assessment and verification:

The applicant shall demonstrate compliance with criterion x(b) for the final product and for any ingoing substance present at concentrations greater than 0,010 % in weight in the final product. A declaration of compliance shall be provided by the applicant supported, where appropriate, by the declarations from their supplier(s) that none of these substances meets the criteria for classification with one or more of hazard statements listed in Table 57 in the form(s) and physical state(s) they are present in the final product. Material safety data sheet for the final product shall also be provided.

The following technical information related to the form(s) and physical state(s) of the ingoing substances as present in the product shall be provided to support the declaration of non-classification:

(i) For substances that have not been registered under REACH and/or which do not yet have a harmonised CLP classification: Information meeting the requirements listed in Annex VII to REACH;

(ii) For substances that have been registered under REACH and which do not meet the requirements for CLP classification: Information based on the REACH registration dossier confirming the non- classified status of the substance;

(iii) For substances that have a harmonised classification or are self-classified: safety data sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to REACH;

(iv) In the case of mixtures: safety data sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under CLP Regulation together with information relevant to the mixtures hazard classification according to Annex II to REACH.

For substances listed in Annexes IV and V to REACH, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of REACH, a declaration to this effect by the applicant shall suffice to comply with criterion x(b).

A declaration on the presence of ingoing substances that fulfil the derogation conditions shall be provided by the applicant, supported, where appropriate, by declarations from their supplier(s). Where required for the derogation, the applicant shall confirm the concentrations of these substances in the final product.

4.5.5.3 Sub-criterion (c): Substances of very high concern (SVHCs)

The final product shall not contain any ingoing substances that have been identified according to the procedure described in Article 59(1) of REACH, which establishes the candidate list for substances of very high concern.

Assessment and verification:
The applicant shall provide a declaration of compliance, supported by declarations from their suppliers, as appropriate, on non-presence of the candidate list substances.
Reference to the latest list of substances of very high concern shall be made on the date of application.

4.5.5.4 Sub-criterion (d): Fragrances

Any ingoing substance added to the product as a fragrance shall be manufactured and handled following the code of practice of the International Fragrance Association (IFRA) available at http://www.ifraorg.org. The recommendations of the IFRA Standards concerning prohibition, restricted use and specified purity criteria for substances shall be followed by the manufacturer.

Assessment and verification:

The applicant, their supplier or fragrance manufacturer, as appropriate, shall provide a signed declaration of compliance.

4.5.5.5 Sub-criterion (e): Preservatives

(i) The product may only include preservatives in order to preserve the product, and in the appropriate dosage for this purpose alone. This does not refer to surfactants, which may also have biocidal properties.

(ii) The product may contain preservatives provided that they are not bio-accumulating. A preservative is considered to be not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used.

(iii) It is prohibited to claim or suggest on the packaging or by any other communication that the product has an antimicrobial or disinfecting effect.

Assessment and verification:
The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any preservative added, and information on its BCF and/or log Kow values. The applicant shall provide also artwork of the packaging.

4.5.5.6 Sub-criterion (f): Colouring agents

Colouring agents in the product shall not be bio-accumulating.

A colouring agent is considered not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used. In the case of colouring agents approved for use in food, it is not necessary to submit documentation of bio-accumulation potential.

Assessment and verification:
The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any colorant added together with information on its BCF and/or log Kow value, or documentation to ensure that the colouring agent is approved for use in food.

4.5.5.7 Sub-criterion (g): Enzymes

Only enzyme encapsulates (in solid form) and enzyme liquids/slurries shall be used.

Assessment and verification:
The applicant shall provide a declaration of compliance supported by copies of the safety data sheets of any enzyme added.

4.5.6 Criterion 5: Packaging

(a) Weight/utility ratio (WUR)

The weight/utility ratio (WUR) of the product shall be calculated for the primary packaging only and shall not exceed the following values for the reference dosage:

Product type	WUR
Dishwasher detergents	2,4 g
Rinse aids	1,5 g

Plastic/paper/cardboard packaging containing more than 80 % recycled materials is exempted from this requirement.

Assessment and verification:

The applicant shall provide the calculation of the WUR of the product. If the product is sold in different packaging (i.e. with different volumes), the calculation shall be submitted for each packaging size for which the EU Ecolabel shall be awarded. In the case of trigger sprays and the allocation of weight to the primary packaging, this shall be on the basis of pan-European sales data for the product, indicating unit sales of each. The WUR is calculated as follows:

$$WUR = \sum((W_i + U_i)/(D_i * R_i)$$

Where:
Wi: weight (g) of the primary packaging (i),
Ui: weight (g) of non-recycled packaging in the primary packaging (i). Ui = Wi unless the applicant can document otherwise,
Di: number of reference doses contained in the primary packaging (i),
Ri: number of times that the primary packaging (i) can be refilled and used for the same purpose. Ri = 1 (packaging is not reused for the same purpose) unless the applicant can document a higher number.

The applicant shall provide a signed declaration for the content of recycled material, along with relevant documentation. Packaging is regarded as recycled if the raw material used to make the packaging has been collected from packaging manufacturers at the distribution stage or at the consumer stage. Where the raw material is industrial waste from the material manufacturer's own production process, then the material will not be regarded as recycled.

(b) *Design for recycling*

Plastic packaging shall be designed to facilitate effective recycling by avoiding potential contaminants and incompatible materials that are known to impede separation or reprocessing or to reduce the quality of recyclate. The label or sleeve, closure and, where applicable, barrier coatings shall not comprise, either singularly or in combination the materials and components listed in Table 72. Pumps are exempted from this requirement.

Table 72. Materials and components excluded from packaging elements

Packaging element	Excluded materials and components*
Label or sleeve	- PS label or sleeve in combination material used with a PET, PP or HDPE bottle - PVC label or sleeve in combination with a PET, PP or HDPE bottle - PETG label or sleeve in combination with a PET bottle - Sleeves made of different polymer than the bottle - Labels or sleeves that are metallised or are welded to a packaging body (in mould labelling)
Closure	- PS closure in combination a with a PET, HDPE or PP bottle - PVC closure in combination with a PET, PP or HDPE bottle - PETG closures and/or closure material with density of above 1 g/cm3 in combination with a PET bottle - Closures made of metal, glass, EVA - Closures made of silicone. Exempted are silicone closures with a density < 1 g/cm3 in combination with a PET bottle and silicone closures with a density > 1g/cm3 in combination with PEHD or PP bottle - Metallic foils or seals which remain fixed to the bottle or its closure after the product has been opened
Barrier coatings	Polyamide, EVOH, functional polyolefins, metallised and light blocking barriers

* EVA – Ethylene Vinyl Acetate, EVOH – Ethylene vinyl alcohol, HDPE – High-density polyethylene, PET – Polyethylene terephtalate, PETG – Polyethylene terephthalate glycol-modified, PP – Polypropylene, PS – Polystyrene, PVC – Polyvinylchloride

Assessment and verification:

The applicant shall submit a signed declaration of compliance specifying the material composition of the packaging including the container, label or sleeve, adhesives, closure and barrier coating, as appropriate, and a sample of primary packaging.

4.5.7 Criterion 6: Fitness for use

The product shall have a satisfactory cleaning performance at the recommended dosage according to most updated IKW protocol available at

http://www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_DishwasherA_B_e.pdf or the most updated standard EN 50242 / IEC 60436 modified as follows

- The tests shall be carried out at 50 °C ± 2 °C (or at a lower temperature if the detergent claims to be efficient at a temperature below 50 °C) with cold pre-wash without detergent. The reference product shall be always tested at 50 °C, regardless the claims of the testing product (detergent to be awarded)
- The machine used in the test shall be connected to cold water and must hold 12 place settings, width of 60 cm and a cleaning performance (oven drying method) in average values of 3.55 ± 0.20 as described in Annex N of the EN50242: EN 60436
- A weak acidic rinsing agent in accordance with the standard (formula III) shall be used
- The rinsing ~~agent~~ aid dosage shall be a setting at level 3. When applying for rinse aids in combination with dishwasher detergents, the rinse aid shall be used in the test instead of the reference rinse aid.
- The dosage of dishwasher detergent shall be as recommended by the manufacturer
- Three attempts shall be carried out at a water hardness in accordance with the standard EN 50242/IEC 60436. The water hardness of sump water in the 2 heated rinses shall be ≤ 0.5 mmol/l*.
- An attempt consists of five washes where the result is read after the fifth wash without the dishes being cleaned between the washes
- The result shall be better than or identical to the reference detergent after the fifth wash
- Recipe for the reference detergent (Detergent B IEC 436) and rinsing agent (formula III), can be found in Annex D in the standard EN 50242/IEC 60436. The quantities (dosage used) shall be as recommended by the manufacturer of the reference product, but shall not be more than the limits included in the section 5.7 of the standard EN 50242/IEC 60436 for the detergent and section 5.8 of the standard EN 50242/IEC 60436 for the rinse aid agent
-

If rinse aid and salt functions are a part of a multifunctional product the effect of the claimed functions must be documented by test.

An equivalent test to the IKW test or the modified version of EN 50242/IEC 60436 may be used if equivalence has been assessed and accepted by the Competent Body.

The test shall be preferentially performed by a laboratory complying with the relevant harmonized standards for testing and calibration laboratories.

Assessment and verification:

The applicant shall provide documentation confirming that the product has been tested under the specified conditions and fulfilled the requirements. Information should be provided on:

(a) The standard conditions used to perform the testing

(b) The recommended dosage and the lowest recommended wash temperature at which the product claims to be effective

(c) Test report and test results showing the cleaning performance of the dishwasher detergent (testing product)

(d) The compliance within the laboratory requirements included in the relevant harmonized standards for testing and calibration laboratories, if appropriate

* When the machine is run on reference programme or equivalent with a clean load installed and no detergent, the values specified in this criterion shall be achieved. The hardness is to be within the prescribed range.

4.5.8 Criterion 7: User information

The detergent shall be accompanied by instructions for proper use so as to maximise product performance and minimise waste and use of resources. These instructions shall be legible or include graphical representation or icons and include information on (if appropriate):

(a) dosing instructions

The applicant shall take suitable steps to help consumers respect the recommended dosage, making available the dosing instructions and if possible a convenient dosage system (e.g. caps). Dosing instruction shall include information on the recommended dosage in g or ml and a second or alternative metric may be given in brackets (e.g. capsules, squirts, or other if the packaging has a dosage system). Recommended dosage for a standard load for at least two levels of soiling shall be included. Information on the impact of water hardness on dosing and indications of the most prevalent water hardness in the area where the product is intended to be marketed or where this information can be found shall be provided.

(b) resource saving measures

The applicant shall recommend washing at the lowest appropriate temperature the product claims effectiveness, which shall not be higher than 50C, and washing with full loads.

(c) packaging disposal information

The primary packaging shall include information on the reuse, recycling and/or correct disposal of packaging.

(d) environmental information

The following text should appear on the primary packaging: *"All detergents have an effect on the environment. For maximum effectiveness always use the correct dose and, the lowest recommended temperature. This will minimize both energy and water consumption and reduce water pollution"*.

Assessment and verification:
The applicant shall provide a declaration of compliance together wirh a sample of the product packaging, including the label.

4.5.9 Criterion 8: Information appearing on the EU Ecolabel

The logo should be visible and legible. The EU Ecolabel registration/licence number must appear on the product and it must be legible and clearly visible. Optional label with text box shall contain the following text:

— Harm to aquatic life is limited
— Amount of hazardous substances is restricted
— Tested for wash performance

Assessment and verification:

The applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a signed declaration of compliance.

5 PROPOSED EU ECOLABEL CRITERIA FOR INDUSTRIAL AND INSTITUTIONAL AUTOMATIC DISHWASHER DETERGENTS

5.1 Name, scope and definition

The product group 'Industrial and Institutional Automatic Dishwasher Detergents' shall comprise any dishwasher detergent, rinse or pre-soak, falling under the scope of Regulation (EC) No 648/2004 of the European Parliament and of the Council on detergents and designed to be used by specialised personnel in professional dishwashers.

Included in this product group are multi-component systems constituted of more than one component used to build up a complete detergent. Multi-component systems may incorporate a number of products including pre-soaks and rinsing agents.

This product group shall not comprise dishwasher detergents designed for household dishwashers, detergents intended to be used in washers of medical devices or in special machines for the food industry.
Sprays not dosed via automatic pumps are excluded from this product group.

5.2 Definitions

(1) "ingoing substances" means substances intentionally added, by-products and impurities from raw materials in the final product formulation (including water-soluble foil, if applicable);
(2) "primary packaging" means packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase in direct contact with the content, including label where applicable;
(3) "microplastics" means plastic micro beads used as a scrub/abrasive material in detergent and cleaning products.

5.3 Assessment and verification requirements and measurement thresholds

A) Requirements

The specific assessment and verification requirements are indicated within each criterion.
Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or their supplier(s) as appropriate.

Competent Bodies shall preferentially recognise attestations which are issued by bodies accredited according to the relevant harmonised standard for testing and calibration laboratories and verifications by bodies that are accredited according to the relevant harmonised standard for bodies certifying products, processes and services.

Where appropriate, test methods other than those indicated for each criterion may be used if the Competent Body assessing the application accepts their equivalence.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications.

As pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

The Appendix I makes reference to the "Detergent Ingredient Database" list (DID list) which contains the most widely used ingoing substances in detergents and cosmetics formulations. It shall be used for deriving the data for the calculations of the Critical Dilution Volume (CDV) and for the assessment of the biodegradability of the ingoing substances. For substances not present on the DID list, guidance is given on how to calculate or extrapolate the relevant data. The latest version of the DID list is available from the EU Ecolabel website or via the websites of the individual competent bodies.
The following information shall be provided to the competent body:

(i) The list of all ingoing substances indicating trade name, chemical name, CAS no., DID no., the ingoing quantity, the function and the form present in the final product formulation (including foil) at or above the following concentrations:
- preservatives, fragrances and colouring agents - regardless of concentration,
- other ingoing substances - 0,010% by weight;

For each ingoing substance listed, the safety data sheet in accordance with Regulation (EC) No 1907/2006 of the European Parliament and of the Council shall be provided.
(ii) If a supplier prefers not to disclose the ingoing substances included in a mixture to the applicant, the information can be sent directly to the Competent Body by the supplier;
(iii) In exceptional cases, if the ingoing substances included in a mixture are unknown, the applicant can supply the information requested in (i) for the mixture.

B) Measurement thresholds

Compliance with the ecological criteria is required for all ingoing substances as specified in Table 18.

Table 18. Threshold levels applicable to ingoing substances by criterion for xxxx Detergents

Criterion name		surfactants	preservatives	colouring agents	fragrances	other
Toxicity to aquatic organisms		≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Biodegradability	Surfactants	≥ 0,010	x	x	x	x
	Organics	≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Sustainable sourcing of palm		≥ 0,010	x	x	x	x

oil						
Excluded or limited substances and mixtures	Specified excluded and limited subst.	no limit*	no limit*	no limit*	no limit*	no limit*
	Hazardous subst.	≥0,010	≥0,010	≥0,010	≥0,010	≥0,010
	SVHCs	no limit*	no limit*	no limit*	no limit*	no limit*
	Fragrances	x	x	x	no limit*	x
	Preserva-tives	x	no limit*	x	x	x
	Colourants	x	x	no limit*	x	x
	Enzymes	x	x	x	x	≥ 0,010

* "no limit" means: regardless of the concentration, all substances intentionally added, by-products and impurities from raw materials (analytical limit of detection)

5.4 Reference dosage

The following dosage is taken as the reference dosage for the calculations aiming at documenting compliance with the EU Ecolabel criteria and for testing of cleaning ability:
Highest dosage recommended by the manufacturer to produce one litre of washing solution based on water hardness (indicated in g/l washing solution or ml/l washing solution).

5.5 Criteria for industrial and institutional dishwasher detergents

5.5.1 Criterion 1: Toxicity to aquatic organisms

The critical dilution volume (CDV) of the product must not exceed the following limits for the reference dosage:

Water hardness / Product type	Soft (<1,5 mmol CaCO3/l)	Medium (1,5 – 2,5 mmol CaCO3/l)	Hard (>2,5 mmol CaCO3/l)
Pre-soaks	2 000	2 000	2 000
Dishwasher detergents	3 000	5 000	7 000
Multi-component systems	3 000	4 000	5 000
Rinse aids	3 000	3 000	3 000

Assessment and verification:
The applicant shall provide the calculation of the CDV of the product. A spreadsheet for calculating of the CDV value is available on the EU Ecolabel website.
The CDV is calculated for all ingoing substances (i) in the product using the following equation:

$$CDV = \sum CDV(i) = 1000 \cdot \sum dosage(i) \cdot \frac{DF(i)}{TF(i)}$$

Where:
dosage(i): weight (g) of the substance or mixture i in the reference dose,
DF(i): degradation factor for the substance or mixture i
TF(i): toxicity factor for the substance or mixture i
The values of DF(i) and TF(i) shall be as given in the DID list Part A (Appendix I). If an ingoing substance is not included in the DID list Part A, the applicant shall estimate the values following the approach described in the DID list Part B (Appendix I).

Because of the degradation of certain substances in the wash process, separate rules apply to the following:
hydrogen peroxide (H2O2) – not to be included in calculation of CDV
peracetic acid – to be included in the calculation as acetic acid.

5.5.2 Criterion 2: Biodegradability

(a) Biodegradability of surfactants

All surfactants shall be readily degradable (aerobically).

All surfactants classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable.

(b) Biodegradability of organic compounds

The content of organic substances in the product that are aerobically non-biodegradable (not readily biodegradable aNBO) or anaerobically non-biodegradable (anNBO) shall not exceed the following limits for a reference dosage:

aNBO (g/l washing solution)

Water hardness / Product type	Soft <1,5 mmol CaCO3/l	Medium 1,5 – 2,5 mmol CaCO3/l	Hard > 2,5 mmol CaCO3/l
Pre-soaks	0,4	0,4	0,4
Dishwasher detergents/ Multi-component system	0,4	0,4	0,4
Rinse aids	0,04	0,04	0,04

anNBO (g/l washing solution)

Water hardness / Product type	Soft <1,5 mmol CaCO3/l	Medium 1,5 – 2,5 mmol CaCO3/l	Hard > 2,5 mmol CaCO3/l
Pre-soaks	0,4	0,4	0,4
Dishwasher detergents/ Multi-component system	0,6	1,0	1,0
Rinse aids	0,04	0,04	0,04

Assessment and verification:

The applicant shall provide documentation for the degradability of surfactants, as well as the calculation of aNBO and anNBO for the product. A spreadsheet for calculating aNBO and anNBO values is available on the EU Ecolabel website.

For both surfactants and aNBO and anNBO values, reference shall be done to the DID list.

For ingoing substances which are not included in the DID list, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided as described in the Appendix x, which is available on the EU Ecolabel website.

In the absence of documentation in accordance with the above requirements, an ingoing substance other than a surfactant may be exempted from the requirement for anaerobic degradability if one of the following three alternatives is fulfilled:

1. Readily degradable and has low adsorption (A < 25 %);
2. Readily degradable and has high desorption (D > 75 %);
3. Readily degradable and non-bioaccumulating.

Testing for adsorption/desorption may be conducted in accordance with OECD guidelines 106.

5.5.3 Criterion 3: Sustainable sourcing of palm oil, palm kernel oil and their derivatives

Ingoing substances used in the products which are derived from palm oil or palm kernel oil shall be sourced from plantations that meet the criteria for sustainable management that have been developed by multi-stakeholder organisations that have a broad membership including NGOs, industry and government.

Assessment and verification:
The applicant shall provide third-party certifications that the palm oil and palm kernel oil used in the manufacturing of the product originates from sustainably managed plantations. Certifications accepted shall include RSPO (by identity preserved, segregated or mass balance) or any equivalent scheme based on multi-stakeholder sustainable management criteria. For chemical derivatives of palm oil and palm kernel oil, it is acceptable to demonstrate sustainability through book and claim systems such as GreenPalm or equivalent.

5.5.4 Criterion 4: Excluded and restricted substances

5.5.4.1 Sub-criterion (a): Specified excluded and restricted ingoing substances

(i) Excluded substances

Substances indicated in Table 47 shall not be included in the product formulation:

Table 47. List of substances excluded from detergents and cleaning products regardless of concentration

- APEO and ADP
- Diazolinidylurea
- DTPA
- EDTA
- Formaldehyde
- Fragrances
- Microplastics
- Nanosilver
- Per-fluorinated alkylates
- Quaternary ammonium salts not readily biodegradable
- Reactive chlorine compounds
- Sodium hydroxyl methyl glycinate
- Triclosan
- 5-bromo-5-nitro-1,3-dioxane
- 2-bromo-2-nitropropane-1,3-diol

(ii) Restricted substances

Substances listed below shall not be included in the product formulation above the specified mass concentration:

The total content of phosphorus compounds in the product is limited to

Product type (in gP/l water)	Water hardness (mmol CaCO3/l)		
	Soft (<1,5)	Medium (1,5-2,5)	Hard (>2,5)
Pre-soaks	0,08	0,08	0,08
Dishwasher detergents	0,15	0,30	0,50
Rinse aids	0,02	0,02	0,02
Multicomponent system	0,17	0,32	0,52

- Fragrance substances subject to the declaration requirement provided in Detergents Regulation (EC) No 684/2004 shall not be present in quantities ≥ 0,010 % (≥ 100 ppm) per substance

Assessment and verification:

The applicant shall provide:

- a signed declaration of compliance supported by declarations from suppliers, if appropriate, confirming that the listed substances have not been included in the product formulation, either regardless of mass concentration (substances listed in (i)) or above specified concentration (substances listed in (ii)),
- for phosphorus: a) information on the complexing agent in the product (detail information of the type of phosphorus-containig substances added as ingredients), b) calculation of the product's total P-content.

5.5.4.2 Sub-criterion (b): Hazardous substances

The final product shall not be classified and labelled as being acutely toxic, a specific target organ toxicant, a respiratory or skin sensitiser, carcinogenic, mutagenic or toxic for reproduction, or hazardous to the environment, in accordance with CLP Regulationa.

The product shall not contain ingoing substances meeting the criteria for classification as toxic, hazardous to the environment, respiratory or skin sensitizers, carcinogenic, mutagenic or toxic for reproduction in accordance with CLP Regulationa and as interpreted according to the hazard statements listed in Table 57.

Any ingoing substance present at a concentration above 0,010% w/w in the product shall meet this requirement. Where stricter, the generic or specific concentration limits determined in accordance with Article 10 of CLP Regulation shall prevail to the cut-off limit value of 0,010% w/w.

Table 57. Restricted hazard classifications and their categorisation

Acute toxicity	
Category 1 and 2	**Category 3**
H300 Fatal if swallowed	H301 Toxic if swallowed
H310 Fatal in contact with skin	H311 Toxic in contact with skin
H330 Fatal if inhaled	H331 Toxic if inhaled
H304 May be fatal if swallowed and enters airways	EUH070 Toxic by eye contact
Specific target organ toxicity	
Category 1	**Category 2**
H370 Causes damage to organs	H371 May cause damage to organs
H372 Causes damage to organs through prolonged or repeated exposure	H373 May cause damage to organs through prolonged or repeated exposure
Respiratory and skin sensitisation	
Category 1A	**Category 1B**
H317: May cause allergic skin reaction	H317: May cause allergic skin reaction
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	**Category 2**
H340 May cause genetic defects	H341 Suspected of causing genetic defects
H350 May cause cancer	H351 Suspected of causing cancer
H350i May cause cancer by inhalation	
H360F May damage fertility	H361f Suspected of damaging fertility
H360D May damage the unborn child	H361d Suspected of damaging the unborn child
H360FD May damage fertility. May damage the unborn child	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child
H360Fd May damage fertility. Suspected of damaging the unborn child	H362 May cause harm to breast fed children
H360Df May damage the unborn child. Suspected of damaging fertility	
Hazardous to the aquatic environment	
Category 1 and 2	**Category 3 and 4**
H400 Very toxic to aquatic life	H412 Harmful to aquatic life with long-lasting effects
H410 Very toxic to aquatic life with long-lasting effects	H413 May cause long-lasting effects to aquatic life
H411 Toxic to aquatic life with long-lasting effects	
Hazardous to the ozone layer	
H420 Hazardous to the ozone layer	

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications in accordance with article 15 of CLP Regulationa. The hazard statements generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall apply.

Ingoing substances which change their properties upon processing (e.g. become no longer bioavailable or undergo chemical modification) so that the hazards no longer apply and that any unreacted residual content of the hazardous substances is less than 0,010% w/w are exempted from this criterion x(b).

This criterion does not apply to ingoing substances covered by Article 2(7)(b) of the REACHb which sets out criteria for exempting substances within Annex V from the registration, downstream user and evaluation requirements. In order to determine if this exclusion applies, the applicant shall screen any ingoing substance present at a concentration above 0,010% w/w.

Substances and mixtures included in Table 8 are exempted from the requirement of this criterion.

Table 8. Derogated substances

Substance	Hazard statement
Surfactants in total concentrations <20% in the final product	H400: Very toxic to aquatic life
Surfactants in total concentrations <25% in the final product	H412: Harmful to aquatic life with long-lasting effects
Subtilisin	H400: Very toxic to aquatic life H411: Toxic to aquatic life with long-lasting effects
Enzymes(*)	H317: May cause allergic skin reaction
	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
NTA as an impurity in MGDA and GLDA(**)	H351: Suspected of causing cancer
Preservatives	[Ongoing consultation]

(*) Including stabilisers and other auxiliary substances in the preparations
(**) In concentrations lower than 0,2 % in the raw material as long as the total concentration in the final product is lower than 0,10 %.

Assessment and verification:

The applicant shall demonstrate compliance with criterion x(b) for the final product and for any ingoing substance present at concentrations greater than 0,010 % in weight in the final product. A declaration of compliance shall be provided by the applicant supported, where appropriate, by the declarations from their supplier(s) that none of these substances meets the criteria for classification with one or more of hazard statements listed in Table 57 in the form(s) and physical state(s) they are present in the final product. Material safety data sheet for the final product shall also be provided.

The following technical information related to the form(s) and physical state(s) of the ingoing substances as present in the product shall be provided to support the declaration of non-classification:

(i) For substances that have not been registered under REACH and/or which do not yet have a harmonised CLP classification: Information meeting the requirements listed in Annex VII to REACH;

(ii) For substances that have been registered under REACH and which do not meet the requirements for CLP classification: Information based on the REACH registration dossier confirming the non- classified status of the substance;

(iii) For substances that have a harmonised classification or are self-classified: safety data sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to REACH;

(iv) In the case of mixtures: safety data sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under CLP Regulation together with information relevant to the mixtures hazard classification according to Annex II to REACH.

For substances listed in Annexes IV and V to REACH, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of REACH, a declaration to this effect by the applicant shall suffice to comply with criterion x(b).

A declaration on the presence of ingoing substances that fulfil the derogation conditions shall be provided by the applicant, supported, where appropriate, by declarations from their supplier(s). Where required for the derogation, the applicant shall confirm the concentrations of these substances in the final product.

5.5.4.3 Sub-criterion (c): Substances of very high concern (SVHCs)

The final product shall not contain any ingoing substances that have been identified according to the procedure described in Article 59(1) of REACH, which establishes the candidate list for substances of very high concern.

Assessment and verification:

The applicant shall provide a declaration of compliance, supported by declarations from their suppliers, as appropriate, on non-presence of the candidate list substances.

Reference to the latest list of substances of very high concern shall be made on the date of application.

5.5.4.4 Sub-criterion (d): Fragrances

Industrial and institutional dishwasher products shall not contain any fragrances.

Assessment and verification:
The applicant shall provide a signed declaration of compliance.

5.5.4.5 Sub-criterion (e): Preservatives

(i) The product may only include preservatives in order to preserve the product, and in the appropriate dosage for this purpose alone. This does not refer to surfactants, which may also have biocidal properties.

(ii) The product may contain preservatives provided that they are not bio-accumulating. A preservative is considered to be not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used.

(iii) It is prohibited to claim or suggest on the packaging or by any other communication that the product has an antimicrobial or disinfecting effect.

Assessment and verification:
The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any preservative added, and information on its BCF and/or log Kow values. The applicant shall provide also artwork of the packaging.

5.5.4.6 Sub-criterion (f): Colouring agents

Colouring agents in the product shall not be bio-accumulating.

A colouring agent is considered not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used. In the case of colouring agents approved for use in food, it is not necessary to submit documentation of bio-accumulation potential.

Assessment and verification:
The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any colorant added together with information on its BCF and/or log Kow value, or documentation to ensure that the colouring agent is approved for use in food.

5.5.4.7 Sub-criterion (g): Enzymes

Only enzyme encapsulates (in solid form) and enzyme liquids/slurries shall be used.

Assessment and verification:

The applicant shall provide a declaration of compliance supported by copies of the safety data sheets of any enzyme added.

5.5.5 Criterion 5: Packaging

(a) Weight/utility ratio (WUR)
The weight/utility ratio (WUR) of the product shall be calculated for the primary packaging only and shall not exceed the following values for the reference dosage:

Water hardness / Product type	Soft <1,5 mmol CaCO3/l	Medium 1.5 – 2,5 mmol CaCO3/l	Hard > 2,5 mmol CaCO3/l
Powders	0,8 g	1,4 g	2,0 g
Liquids	1,0 g	1,8 g	2,5 g

Plastic/paper/cardboard packaging containing more than 80 % recycled materials is exempted from this requirement.

Assessment and verification:
The applicant shall provide the calculation of the WUR of the product. If the product is sold in different packaging (i.e. with different volumes), the calculation shall be submitted for each packaging size for which the EU Ecolabel shall be awarded. In the case of trigger sprays and the allocation of weight to the primary packaging, this shall be on the basis of pan-European sales data for the product, indicating unit sales of each.
The WUR is calculated as follows:

$$WUR = \sum((W_i + U_i)/(D_i * R_i)$$

Where:
Wi: weight (g) of the primary packaging (i),
Ui: weight (g) of non-recycled packaging in the primary packaging (i). Ui = Wi unless the applicant can document otherwise,
Di: number of reference doses contained in the primary packaging (i),
Ri: number of times that the primary packaging (i) can be refilled and used for the same purpose. Ri = 1 (packaging is not reused for the same purpose) unless the applicant can document a higher number.
The applicant shall provide a signed declaration for the content of recycled material, along with relevant documentation. Packaging is regarded as recycled if the raw material used to make the packaging has been collected from packaging manufacturers at the distribution stage or at the consumer stage. Where the raw material is industrial waste from the material manufacturer's own production process, then the material will not be regarded as recycled.

(b) Design for recycling
Plastic packaging shall be designed to facilitate effective recycling by avoiding potential contaminants and incompatible materials that are known to impede separation or reprocessing or to reduce the quality of recyclate. The label or sleeve, closure and, where applicable, barrier coatings shall not comprise, either singularly or in combination the materials and components listed in Table 72. Pumps are exempted from this requirement.

Table 72. Materials and components excluded from packaging elements

Packaging element	Excluded materials and components*
Label or sleeve	- PS label or sleeve in combination material used with a PET, PP or HDPE bottle - PVC label or sleeve in combination with a PET, PP or HDPE bottle - PETG label or sleeve in combination with a PET bottle - Sleeves made of different polymer than the bottle - Labels or sleeves that are metallised or are welded to a packaging body (in mould labelling)

Closure	- PS closure in combination a with a PET, HDPE or PP bottle - PVC closure in combination with a PET, PP or HDPE bottle - PETG closures and/or closure material with density of above 1 g/cm3 in combination with a PET bottle - Closures made of metal, glass, EVA - Closures made of silicone. Exempted are silicone closures with a density < 1 g/cm3 in combination with a PET bottle and silicone closures with a density > 1g/cm3 in combination with PEHD or PP bottle - Metallic foils or seals which remain fixed to the bottle or its closure after the product has been opened
Barrier coatings	Polyamide, EVOH, functional polyolefins, metallised and light blocking barriers

* EVA – Ethylene Vinyl Acetate, EVOH – Ethylene vinyl alcohol, HDPE – High-density polyethylene, PET – Polyethylene terephtalate, PETG – Polyethylene terephthalate glycol-modified, PP – Polypropylene, PS – Polystyrene, PVC – Polyvinylchloride

Assessment and verification:
The applicant shall submit a signed declaration of compliance specifying the material composition of the packaging including the container, label or sleeve, adhesives, closure and barrier coating, as appropriate, and a sample of primary packaging.

5.5.6 Criterion 6: Fitness for use

Tests shall be carried out to ensure that the product has a satisfactory wash performance at the lowest recommended dosage for the water hardness according to user tests. The user test should meet the requirements stated in Appendix II.

The test product must be tested against a reference product. The reference product may be a well-established product on the market or the product normally used by the user. The reference product shall be tested at the lowest recommended dosage by the manufacturer and if no dosage is recommend it should be the same dosage used as for the test product. The test product must show efficiency equal to or better than the reference product.

When applying for rinse aids in combination with dishwasher detergents, the rinse aid shall be used in the test instead of the reference rinse aid. For multifunctional products the applicant must submit documentation providing the effect of the claimed functions.

Assessment and verification:
The applicant shall provide documentation confirming that the product has been tested under the Appendix II conditions.
(a) Information about the test centres where the detergent was tested and how they represent a selection of customers.
(b) Information about the products usually used by the test centres (reference product): recommended dosage, washing temperature, product's ability to remove soiling, date of purchase
(b) Information about the test procedure: type of spots and type of dishware, information about the professional dishwasher machine and dishwashing program (eg temperature, duration, drying, etc), and the effectiveness of other products the detergent shall be used with.
(c) all reply forms received from the test users and the overall result on the cleaning performance of detergent specified in a table/ a form. The overall result must be rated in accordance with Appendix II point 6
(d) Information on how satisfied the test centre is with visit reporting arrangements and the categories rated (point 5 of Appendix II).

Appendix II. User test
1. Responses must be obtained from at least five test centres representing a selection of customers.
2. The procedure and dosage must conform to the manufacturer’s recommendations.
3. The test period must continue for at least four weeks.

4. Every test centre must assess the serviceability of the product or multi-component system, dosability, compressibility, rinsing and solubility.
5. Every test centre must assess the effectiveness of the product or multi-component system by answering questions relating to the following aspects (or similar formulations):
ability to launder lightly, moderately or heavily soiled articles to be washed;
an assessment of primary laundering effects such as dirt removal, stain removal capacity and bleaching effect must be rated;
assessment of secondary laundering effects such as greying of white washing and colour-fastness and staining of coloured washing;
assessment of the effect of the rinsing agent on drying, ironing or mangling of the articles to be washed;
how satisfied the test subject is with customer visiting arrangements
6. The response must be rated on a scale comprising at least three levels, for example, 'insufficiently effective', 'sufficiently effective' or 'very effective'. With regard to how satisfied the test centre is with visit reporting arrangements, the categories must be 'not satisfied', 'satisfied' and 'very satisfied'.
7. At least five test centres must submit responses. At least 80 % must rate the product as sufficiently effective or very effective on all points (see point 4 and be satisfied or very satisfied with customer visiting arrangements)
8. All raw data from the test must be specified. The test procedure must be described in detail.

5.5.7 Criterion 7: Automatic dosing systems

For multi-component systems, the applicant shall ensure that the product is used with an automatic and controlled dosing system.

In order to ensure correct dosage in the automatic dosing systems, customer visits shall be performed at all premises using the product, at least once a year during the license period, and they shall include calibration of the dosing equipment. A third party can perform these customer visits.

Assessment and verification:
The applicant shall provide a written description of responsibility for, frequency and content of customer visits.

5.5.8 Criterion 8: User information

The detergent shall be accompanied by instructions for proper use so as to maximise product performance and minimise waste and use of resources. These instructions shall be legible or include graphical representation or icons and include information on (if appropriate):

(a) dosing instructions

The applicant shall take suitable steps to help consumers respect the recommended dosage, making available the dosing instructions and if possible a convenient dosage system (e.g. caps). Dosing instruction shall include information on the recommended dosage in g or ml and a second or alternative metric may be given in brackets (e.g. capsules, squirts, or other if the packaging has a dosage system). Recommended dosage for a standard load for at least two levels of soiling shall be included. Information on the impact of water hardness on dosing and indications of the most prevalent water hardness in the area where the product is intended to be marketed or where this information can be found shall be provided.

(b) resource saving measures

The applicant shall recommend dishwashing at the lowest appropriate temperature the product claims effectiveness and with full loads.

(c) packaging disposal information

The primary packaging shall include information on the reuse, recycling and/or correct disposal of packaging.

(d) environmental information

The following text should appear on the primary packaging: *"All detergents have an effect on the environment. For maximum effectiveness always use the correct dose and, the lowest recommended temperature. This will minimize both energy and water consumption and reduce water pollution"*.

Assessment and verification:
The applicant shall provide a declaration of compliance together wirh a sample of the product packaging, including the label.

5.5.9 Criterion 9: Information appearing on the EU Ecolabel

The logo should be visible and legible. The EU Ecolabel registration/licence number must appear on the product and it must be legible and clearly visible. Optional label with text box shall contain the following text:

— Harm to aquatic life is limited
— Amount of hazardous substances is restricted
— Tested for wash performance
Assessment and verification:

The applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a signed declaration of compliance.

6 PROPOSED EU ECOLABEL CRITERIA FOR HAND DISHWASHING DETERGENTS

6.1 Name, scope and definition

The product group 'Hand dishwashing detergents' shall comprise all detergents intended to be used to wash by hand glassware, crockery and kitchen utensils including cutlery, pots, pans and ovenware, and falling under the scope of Regulation (EC) No 648/2004 of the European Parliament and of the Council on detergents.

The product group shall cover products for both private and professional use. The products shall be a mixture of chemical substances and must not contain micro-organisms that have been deliberately added by the manufacturer.

6.2 Definitions

(1) "ingoing substances" means substances intentionally added, by-products and impurities from raw materials in the final product formulation (including water-soluble foil, if applicable);

(2) "primary packaging" means packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase in direct contact with the content, including label where applicable;

(3) "microplastics" means plastic micro beads used as a scrub/abrasive material in detergent and cleaning products.

6.3 Assessment and verification requirements and measurement thresholds

A) Requirements

The specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or their supplier(s) as appropriate.

Competent Bodies shall preferentially recognise attestations which are issued by bodies accredited according to the relevant harmonised standard for testing and calibration laboratories and verifications by bodies that are accredited according to the relevant harmonised standard for bodies certifying products, processes and services.

Where appropriate, test methods other than those indicated for each criterion may be used if the Competent Body assessing the application accepts their equivalence.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications.

As pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

The Appendix I makes reference to the "Detergent Ingredient Database" list (DID list) which contains the most widely used ingoing substances in detergents and cosmetics formulations. It shall be used for deriving the data for the calculations of the Critical Dilution Volume (CDV) and for the assessment of the biodegradability of the ingoing substances. For substances not present on the DID list, guidance is given on how to calculate or extrapolate the relevant data. The latest version of the DID list is available from the EU Ecolabel website or via the websites of the individual competent bodies.
The following information shall be provided to the competent body:
(i) The list of all ingoing substances indicating trade name, chemical name, CAS no., DID no., the ingoing quantity, the function and the form present in the final product formulation (including foil) at or above the following concentrations:

- preservatives, fragrances and colouring agents - regardless of concentration,
- other ingoing substances - 0,010% by weight;

For each ingoing substance listed, the safety data sheet in accordance with Regulation (EC) No 1907/2006 of the European Parliament and of the Council shall be provided.
(ii) If a supplier prefers not to disclose the ingoing substances included in a mixture to the applicant, the information can be sent directly to the Competent Body by the supplier;
(iii) In exceptional cases, if the ingoing substances included in a mixture are unknown, the applicant can supply the information requested in (i) for the mixture.

B) Measurement thresholds

Compliance with the ecological criteria is required for all ingoing substances as specified in Table 18.

Table 18. Threshold levels applicable to ingoing substances by criterion for xxxx Detergents

Criterion name		surfactants	preservatives	colouring agents	fragrances	other
Toxicity to aquatic organisms		≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Biodegradability	Surfactants	≥ 0,010	x	x	x	x
	Organics	≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Sustainable		≥ 0,010	x	x	x	x

sourcing of palm oil						
Excluded or limited substances and mixtures	Specified excluded and limited subst.	no limit*	no limit*	no limit*	no limit*	no limit*
	Hazardous subst.	≥0,010	≥0,010	≥0,010	≥0,010	≥0,010
	SVHCs	no limit*	no limit*	no limit*	no limit*	no limit*
	Fragrances	x	x	x	no limit*	x
	Preserva-tives	x	no limit*	x	x	x
	Colourants	x	x	no limit*	x	x
	Enzymes	x	x	x	x	≥ 0,010

* "no limit" means: regardless of the concentration, all substances intentionally added, by-products and impurities from raw materials (analytical limit of detection)

6.4 Reference dosage

The following dosages are taken as the reference dosage for the calculations aiming at documenting compliance with the EU Ecolabel criteria and for testing of fitness for use:

Dosage recommended by the manufacturer for one litre of washing water for cleaning normally soiled dishes (indicated in g/l washing water or ml/l washing water).

6.5 Criteria for hand dishwashing detergents

6.5.1 Criterion 1: Toxicity to aquatic organisms

The critical dilution volume (CDV) of the product must not exceed the following limits for the reference dosage:

Product type	Limit CDV
Hand dishwashing detergents	2 300

Assessment and verification:

The applicant shall provide the calculation of the CDV of the product. A spreadsheet for calculating of the CDV value is available on the EU Ecolabel website.

The CDV is calculated for all ingoing substances (i) in the product using the following equation:

$$CDV = \sum CDV(i) = 1000 \cdot \sum dosage(i) \cdot \frac{DF(i)}{TF(i)}$$

Where:

dosage(i): weight (g) of the substance or mixture i in the reference dose,

DF(i): degradation factor for the substance or mixture i

TF(i): toxicity factor for the substance or mixture i

The values of DF(i) and TF(i) shall be as given in the DID list Part A (Appendix I). If an ingoing substance is not included in the DID list Part A, the applicant shall estimate the values following the approach described in the DID list Part B (Appendix I).

6.5.2 Criterion 2: Biodegradability

(a) Biodegradability of surfactants

All surfactants shall be readily degradable (aerobically).

All surfactants classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable.

(b) Biodegradability of organic compounds

The content of organic substances in the product that are aerobically non-biodegradable (not readily biodegradable aNBO) or anaerobically non-biodegradable (anNBO) shall not exceed the following limits for a reference dosage:

Product type	aNBO	anNBO
	g/dosage recommended by the manufacturer for 1 litre of dishwashing water	
Hand dishwashing detergents	0,05	0,15

Assessment and verification:

The applicant shall provide documentation for the degradability of surfactants, as well as the calculation of aNBO and anNBO for the product. A spreadsheet for calculating aNBO and anNBO values is available on the EU Ecolabel website.

For both surfactants and aNBO and anNBO values, reference shall be done to the DID list.

For ingoing substances which are not included in the DID list, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided as described in the Appendix x, which is available on the EU Ecolabel website.

In the absence of documentation in accordance with the above requirements, an ingoing substance other than a surfactant may be exempted from the requirement for anaerobic degradability if one of the following three alternatives is fulfilled:

1. Readily degradable and has low adsorption (A < 25 %);
2. Readily degradable and has high desorption (D > 75 %);
3. Readily degradable and non-bioaccumulating.

Testing for adsorption/desorption may be conducted in accordance with OECD guidelines 106.

6.5.3 Criterion 3: Sustainable sourcing of palm oil, palm kernel oil and their derivatives

Ingoing substances used in the products which are derived from palm oil or palm kernel oil shall be sourced from plantations that meet the criteria for sustainable management that have been developed by multi-stakeholder organisations that have a broad membership including NGOs, industry and government.

Assessment and verification:
The applicant shall provide third-party certifications that the palm oil and palm kernel oil used in the manufacturing of the product originates from sustainably managed plantations. Certifications accepted shall include RSPO (by identity preserved, segregated or mass balance) or any equivalent scheme based on multi-stakeholder sustainable management criteria. For chemical derivatives of palm oil and palm kernel oil, it is acceptable to demonstrate sustainability through book and claim systems such as GreenPalm or equivalent.

6.5.4 Criterion 4: Excluded and restricted substances

6.5.4.1 Sub-criterion (a): Specified excluded and restricted ingoing substances

(i) Excluded substances

Substances indicated in Table 47 shall not be included in the product formulation:

Table 47. List of substances excluded from detergents and cleaning products regardless of concentration

- APEO and ADP
- Atranol
- Chloroatranol
- Diazolinidylurea
- DTPA
- EDTA
- Formaldehyde
- Hydroxyisohexyl 3-cyclohexene carboxaldehyde (HICC)
- Microplastics
- Nanosilver
- Nitromusks and polycyclic musks
- Phosphates
- Per-fluorinated alkylates
- Quaternary ammonium salts not readily biodegradable
- Reactive chlorine compounds
- Sodium hydroxyl methyl glycinate
- Triclosan
- 5-bromo-5-nitro-1,3-dioxane
- 2-bromo-2-nitropropane-1,3-diol

(ii) Restricted substances

Substances listed below shall not be included in the product formulation above the specified mass concentration:

- Fragrance substances subject to the declaration requirement provided in Detergents Regulation (EC) No 684/2004 shall not be present in quantities ≥ 0,010 % (≥ 100 ppm) per substance

Assessment and verification:
The applicant shall provide:
- a signed declaration of compliance supported by declarations from suppliers, if appropriate, confirming that the listed substances have not been included in the product formulation, either regardless of mass concentration (substances listed in (i)) or above specified concentration (substances listed in (ii)),
- for phosphorus: a) information on the complexing agent in the product (detail information of the type of phosphorus-containing substances added as ingredients), b) calculation of the product's total P-content.

6.5.4.2 Sub-criterion (b): Hazardous substances

The final product shall not be classified and labelled as being acutely toxic, a specific target organ toxicant, a respiratory or skin sensitiser, carcinogenic, mutagenic or toxic for reproduction, or hazardous to the environment, in accordance with CLP Regulationa.

The product shall not contain ingoing substances meeting the criteria for classification as toxic, hazardous to the environment, respiratory or skin sensitizers, carcinogenic, mutagenic or toxic for reproduction in accordance with CLP Regulationa and as interpreted according to the hazard statements listed in Table 57.

Any ingoing substance present at a concentration above 0,010% w/w in the product shall meet this requirement. Where stricter, the generic or specific concentration limits determined in accordance with Article 10 of CLP Regulation shall prevail to the cut-off limit value of 0,010% w/w.

Table 57. Restricted hazard classifications and their categorisation

Acute toxicity	
Category 1 and 2	**Category 3**
H300 Fatal if swallowed	H301 Toxic if swallowed
H310 Fatal in contact with skin	H311 Toxic in contact with skin
H330 Fatal if inhaled	H331 Toxic if inhaled
H304 May be fatal if swallowed and enters airways	EUH070 Toxic by eye contact
Specific target organ toxicity	
Category 1	**Category 2**
H370 Causes damage to organs	H371 May cause damage to organs
H372 Causes damage to organs through prolonged or repeated exposure	H373 May cause damage to organs through prolonged or repeated exposure
Respiratory and skin sensitisation	
Category 1A	**Category 1B**
H317: May cause allergic skin reaction	H317: May cause allergic skin reaction
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	**Category 2**
H340 May cause genetic defects	H341 Suspected of causing genetic defects
H350 May cause cancer	H351 Suspected of causing cancer
H350i May cause cancer by inhalation	
H360F May damage fertility	H361f Suspected of damaging fertility
H360D May damage the unborn child	H361d Suspected of damaging the unborn child
H360FD May damage fertility. May damage the unborn child	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child
H360Fd May damage fertility.	H362 May cause harm to breast fed children

Suspected of damaging the unborn child	
H360Df May damage the unborn child. Suspected of damaging fertility	
Hazardous to the aquatic environment	
Category 1 and 2	**Category 3 and 4**
H400 Very toxic to aquatic life	H412 Harmful to aquatic life with long-lasting effects
H410 Very toxic to aquatic life with long-lasting effects	H413 May cause long-lasting effects to aquatic life
H411 Toxic to aquatic life with long-lasting effects	
Hazardous to the ozone layer	
H420 Hazardous to the ozone layer	

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications in accordance with article 15 of CLP Regulationa. The hazard statements generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall apply.

Ingoing substances which change their properties upon processing (e.g. become no longer bioavailable or undergo chemical modification) so that the hazards no longer apply and that any unreacted residual content of the hazardous substances is less than 0,010% w/w are exempted from this criterion x(b).

This criterion does not apply to ingoing substances covered by Article 2(7)(b) of the REACHb which sets out criteria for exempting substances within Annex V from the registration, downstream user and evaluation requirements. In order to determine if this exclusion applies, the applicant shall screen any ingoing substance present at a concentration above 0,010% w/w.

Substances and mixtures included in Table 9. Derogated substances are exempted from the requirement of this criterion.

Table 9. Derogated substances

Substance	Hazard statement
Surfactants in total concentrations <25% in the final product	H400: Very toxic to aquatic life
	H412: Harmful to aquatic life with long-lasting effects
Subtilisin	H400: Very toxic to aquatic life H411: Toxic to aquatic life with long-lasting effects
Enzymes(*)	H317: May cause allergic skin reaction
	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
NTA as an impurity in MGDA and GLDA(**)	H351: Suspected of causing cancer
Fragrances	H412: Harmful to aquatic life with long-lasting effects
Preservatives	*[ongoing consultation]*

(*) Including stabilisers and other auxiliary substances in the preparations
(**) In concentrations lower than 0,2 % in the raw material as long as the total concentration in the final product is lower than 0,10 %.

Assessment and verification:

The applicant shall demonstrate compliance with criterion x(b) for the final product and for any ingoing substance present at concentrations greater than 0,010 % in weight in the final product. A declaration of compliance shall be provided by the applicant supported, where appropriate, by the declarations from their supplier(s) that none of these substances meets the criteria for classification with one or more of hazard statements listed in Table 57 in the form(s) and physical state(s) they are present in the final product. Material safety data sheet for the final product shall also be provided.

The following technical information related to the form(s) and physical state(s) of the ingoing substances as present in the product shall be provided to support the declaration of non-classification:

(i) For substances that have not been registered under REACH and/or which do not yet have a harmonised CLP classification: Information meeting the requirements listed in Annex VII to REACH;

(ii) For substances that have been registered under REACH and which do not meet the requirements for CLP classification: Information based on the REACH registration dossier confirming the non- classified status of the substance;

(iii) For substances that have a harmonised classification or are self-classified: safety data sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to REACH;

(iv) In the case of mixtures: safety data sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under CLP Regulation together with information relevant to the mixtures hazard classification according to Annex II to REACH.

For substances listed in Annexes IV and V to REACH, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of REACH, a declaration to this effect by the applicant shall suffice to comply with criterion x(b).

A declaration on the presence of ingoing substances that fulfil the derogation conditions shall be provided by the applicant, supported, where appropriate, by declarations from their supplier(s). Where required for the derogation, the applicant shall confirm the concentrations of these substances in the final product.

6.5.4.3 Sub-criterion (c): Substances of very high concern (SVHCs)

The final product shall not contain any ingoing substances that have been identified according to the procedure described in Article 59(1) of REACH, which establishes the candidate list for substances of very high concern.

Assessment and verification:

The applicant shall provide a declaration of compliance, supported by declarations from their suppliers, as appropriate, on non-presence of the candidate list substances.

Reference to the latest list of substances of very high concern shall be made on the date of application.

6.5.4.4 Sub-criterion (d): Fragrances

Any ingoing substance added to the product as a fragrance shall be manufactured and handled following the code of practice of the International Fragrance Association (IFRA) available at http://www.ifraorg.org. The recommendations of the IFRA Standards concerning prohibition, restricted use and specified purity criteria for substances shall be followed by the manufacturer.

Assessment and verification:

The applicant, their supplier or fragrance manufacturer, as appropriate, shall provide a signed declaration of compliance.

6.5.4.5 Sub-criterion (e): Preservatives

(i) The product may only include preservatives in order to preserve the product, and in the appropriate dosage for this purpose alone. This does not refer to surfactants, which may also have biocidal properties.

(ii) The product may contain preservatives provided that they are not bio-accumulating. A preservative is considered to be not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used.

(iii) It is prohibited to claim or suggest on the packaging or by any other communication that the product has an antimicrobial or disinfecting effect.

Assessment and verification:

The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any preservative added, and information on its BCF and/or log Kow values. The applicant shall provide also artwork of the packaging.

6.5.4.6 Sub-criterion (f): Colouring agents

Colouring agents in the product shall not be bio-accumulating.

A colouring agent is considered not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used. In the case of colouring agents approved for use in food, it is not necessary to submit documentation of bio-accumulation potential.

Assessment and verification:
The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any colorant added together with information on its BCF and/or log Kow value, or documentation to ensure that the colouring agent is approved for use in food.

6.5.4.7 Sub-criterion (g): Enzymes

Only enzyme encapsulates (in solid form) and enzyme liquids/slurries shall be used.

Assessment and verification:
The applicant shall provide a declaration of compliance supported by copies of the safety data sheets of any enzyme added.

6.5.5 Criterion 5: Packaging

(a) Weight/utility ratio (WUR)
The weight/utility ratio (WUR) of the product shall be calculated for the primary packaging only and shall not exceed 0,25 g/l washing solution for the reference dosage.
Plastic/paper/cardboard packaging containing more than 80 % recycled materials is exempted from this requirement.

Assessment and verification:
The applicant shall provide the calculation of the WUR of the product. If the product is sold in different packaging (i.e. with different volumes), the calculation shall be submitted for each packaging size for which the EU Ecolabel shall be awarded. In the case of trigger sprays and the allocation of weight to the primary packaging, this shall be on the basis of pan-European sales data for the product, indicating unit sales of each.
The WUR is calculated as follows:

$$WUR = \sum((W_i + U_i)/(D_i * R_i)$$

Where:
Wi: weight (g) of the primary packaging (i),
Ui: weight (g) of non-recycled packaging in the primary packaging (i). Ui = Wi unless the applicant can document otherwise,
Di: number of reference doses contained in the primary packaging (i),
Ri: number of times that the primary packaging (i) can be refilled and used for the same purpose. Ri = 1 (packaging is not reused for the same purpose) unless the applicant can document a higher number.
The applicant shall provide a signed declaration for the content of recycled material, along with relevant documentation. Packaging is regarded as recycled if the raw material used to make the packaging has been collected from packaging manufacturers at the distribution stage or at the consumer stage. Where the raw material is industrial waste from the material manufacturer's own production process, then the material will not be regarded as recycled.

(b) Design for recycling

Plastic packaging shall be designed to facilitate effective recycling by avoiding potential contaminants and incompatible materials that are known to impede separation or reprocessing or to reduce the quality of

recyclate. The label or sleeve, closure and, where applicable, barrier coatings shall not comprise, either singularly or in combination the materials and components listed in Table 72. Pumps are exempted from this requirement.

Table 72. Materials and components excluded from packaging elements

Packaging element	Excluded materials and components*
Label or sleeve	- PS label or sleeve in combination material used with a PET, PP or HDPE bottle - PVC label or sleeve in combination with a PET, PP or HDPE bottle - PETG label or sleeve in combination with a PET bottle - Sleeves made of different polymer than the bottle - Labels or sleeves that are metallised or are welded to a packaging body (in mould labelling)
Closure	- PS closure in combination a with a PET, HDPE or PP bottle - PVC closure in combination with a PET, PP or HDPE bottle - PETG closures and/or closure material with density of above 1 g/cm3 in combination with a PET bottle - Closures made of metal, glass, EVA - Closures made of silicone. Exempted are silicone closures with a density < 1 g/cm3 in combination with a PET bottle and silicone closures with a density > 1g/cm3 in combination with PEHD or PP bottle - Metallic foils or seals which remain fixed to the bottle or its closure after the product has been opened
Barrier coatings	Polyamide, EVOH, functional polyolefins, metallised and light blocking barriers

* EVA – Ethylene Vinyl Acetate, EVOH – Ethylene vinyl alcohol, HDPE – High-density polyethylene, PET – Polyethylene terephtalate, PETG – Polyethylene terephthalate glycol-modified, PP – Polypropylene, PS – Polystyrene, PVC – Polyvinylchloride

Assessment and verification:
The applicant shall submit a signed declaration of compliance specifying the material composition of the packaging including the container, label or sleeve, adhesives, closure and barrier coating, as appropriate, and a sample of primary packaging.

6.5.6 Criterion 6: Corrosive properties

The product shall not be classified as a 'Corrosive' (C) mixture with H314, or as a 'Skin corrosion, categories 1A, 1B, 1C' mixture in accordance with CLP Regulation.

Assessment and verification:
The applicant shall provide the exact concentrations of all ingoing substances used in the product, either as part of the formulation or as part of any mixture included in the formulation, that are classified as 'Corrosive' (C) with H314 in accordance with CLP Regulation to the competent body. Declaration should be supported by the material safety data sheets.

6.5.7 Criterion 7: Fitness for use

Tests shall be carried out to ensure that the product has a satisfactory wash performance at the lowest temperature and dosage recommended by the manufacturer for the water hardness according to the 'Framework for testing the performance of hand dishwashing detergents' available at:
http://ec.europa.eu/environment/ecolabel/documents/performance_test.pdf
If no dosage instructions are provided, the same dosage is used as for the test product.
The test shall be preferentially performed by a laboratory complying with the relevant harmonized standards for testing and calibration laboratories.

The generic reference detergent shall be the one prescribed in IKW performance test 'Recommendation for the quality assessment of the cleaning performance of hand dishwashing detergents' (SÖFW-Journal, 128, 5, pp. 11-15, 2002) with the adaptation that the dosage applied in the performance test is set at 2.5 millilitres of the reference detergent per 5 litres of water.

The cleaning ability and cleaning capacity must be equivalent to or better than that of the generic reference detergent.

Assessment and verification:
The applicant shall provide documentation confirming that the product has been tested under the framework conditions. The report must include all the points listed in the "documentation" section of the 'Framework for testing the performance of hand dishwashing detergents'
Information should be provided on the compliance within the laboratory requirements included in the relevant harmonized standards for testing and calibration laboratories, if appropriate.

FRAMEWORK FOR TESTING THE PERFORMANCE OF HAND DISHWASHING DETERGENTS
Version 1.2 of July 2011

The purpose of the performance test is to compare the ability and capacity of a test product to that of a reference product. The framework allows for a wide range of test procedures as long as the requirements below are a part of the test procedure. In the test, washing-up may be done by hand or, alternatively, a machine may be responsible for the mechanical work. The test may either involve the washing up of crockery, e.g. dishes or plates, or tests that do not involve crockery may be used.

Number of repetitions

At least five fifteen repetitions must be performed in which the test and reference products are compared with one another.

Water parameters

• The same volume of water must be used in all repetitions. The volume must be determined in litres to one decimal point.

• The water hardness, specified in mmol CaCO3/l, (16dH = 2.9mmol CaCO3/l or 250ppm CaCO3 = 14±0.5 dH)

• The water temperature must be the same for all repetitions. It shall be measured at the start and kept constant throughout the test. However, a decrease of the water temperature during the test is acceptable, if the same temperature decrease is documented for all repetitions.

Test and reference product parameters

The reference product shall be the one prescribed in IKW performance test "Recommendation for the quality assessment of the cleaning performance of hand dishwashing detergents" [5]. The performance test can be downloaded from the IKW webpage: http://www.ikw.org/ under the section "Information": www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-Handgeschirr-e.pdf

• The dosage applied in the performance test is set at 2.5 millilitres of the reference detergent per 5 litres of water.

• The test detergent shall be dosed according to the dosage for normally soiled dishes recommended on the pack. If no dosage recommendation is given, it shall be dosed at 4 ml per 5 litres of water for normal hand dishwashing detergent and at 2 ml per 5 litres of water for concentrated products. The detergent must be mixed and completely dissolved in the water.

Soil parameters

• At least one type of soil must be used.

• The same soil must be used for all repetitions.

• The origin or chemical composition of the soil, must be described in detail and shall be in accordance with the test soils described in the IKW performance test mentioned in the previous section.

• The soil must be homogenous and of even consistency.

• Enough soil for the entire test must be prepared in one batch.

• The quantity of soil applied to a substrate, e.g. plates or dishes, or to the washing-water must be the same in all repetitions and must be weighed in grams to one decimal point.

Test procedure

• The test and reference products must be made anonymous to the person(s) performing the test.

• The elements and stages included in each repetition must be decided in advance and must be identical for each repetition.

• The temperature and relative humidity of the room must be measured and kept constant in all repetitions.

• A fixed procedure for application of soil, allowing sufficient time for drying, must be determined in advance.

• A fixed procedure for manual dishwashing or removal of soil by machinery must be described in advance.

• At least fifteen repetitions must be performed with both the test and reference product.

Assessment of cleaning capacity

• The test must be capable of generating results that provide a measure of capacity. The capacity must be expressed in grams of soil removed per five litres of water before reaching a predefined point of saturation. The point of saturation can for example be when a cleaning effect is no longer observed, when soil is floating at the surface of the water, when the foam layer is not completely covering the surface, or when there is no visible foam.

Comparison

• A positive result of a test round is obtained when the cleaning capacity is as good or better for the test product compared with the reference product.

• The test product is considered to have fulfilled the performance requirements when positive results are obtained in at least 80 % of the test rounds. As an alternative, the applicant may use statistical methods and demonstrate with a one-sided 95 % confidence range that the test product is as good as or better than the reference product.

Documentation
All tests must be reported in accordance with the following specification. The report must contain the following points:
• Description of how the test and reference products were made anonymous to the person(s) performing the test.
• Specification of the temperature and humidity in the test room and details describing how the test person(s) ensured that these conditions were kept constant in all repetitions.
• Description of the composition of the soil and of the procedure used to ensure that the soil was of a homogenous and even consistency.
• Specification of the hardness of the water, and how it was achieved, and specification of the calcium/magnesium ratio.
• Specification of the quantity of water used in the repetitions and specification of how the water temperature requirement was fulfilled.
• Specification of the results of the weighing of the hand dishwashing detergent in each repetition and description of the procedure for dissolving the product in the water.
• Description of the procedure for adding the soil to either a substrate (e.g. plates or dishes) or to the washing water.
• Specification of the results of the weighing of soil in each repetition.
• Description of the other elements and stages in each individual repetition.
• Description of how cleaning capacity was measured.
• Raw data from all repetitions stated in terms of cleaning capacity.
• Final results and, if applicable, a statistical evaluation of the data.

6.5.8 Criterion 8: User information

The detergent shall be accompanied by instructions for proper use so as to maximise product performance and minimise waste and use of resources. These instructions shall be legible or include graphical representation or icons and include information on (if appropriate):

(a) dosing instructions

The applicant shall take suitable steps to help consumers respect the recommended dosage, making available the dosing instructions and if possible a convenient dosage system (e.g. caps). Dosing instruction shall include information on the recommended dosage in g or ml and a second or alternative metric may be given in brackets (e.g. capsules, squirts, or other if the packaging has a dosage system). Recommended dosage for a standard load for at least two levels of soiling shall be included. Information on the impact of water hardness on dosing and indications of the most prevalent water hardness in the area where the product is intended to be marketed or where this information can be found shall be provided.

(b) resource saving measures

The text "*do not use running water but immerse the dishes*", "*Use as little as detergent as necessary*" and "*wash at the lowest suitable temperature*" or equivalent statements shall be included on the primary packaging.

(c) packaging disposal information

The primary packaging shall include information on the reuse, recycling and/or correct disposal of packaging.

(d) environmental information

The following text should appear on the primary packaging: *"All detergents have an effect on the environment. For maximum effectiveness always use the correct dose and, the lowest recommended temperature. This will minimize both energy and water consumption and reduce water pollution"*

Assessment and verification:
The applicant shall provide a declaration of compliance together wirh a sample of the product packaging, including the label.

6.5.9 Criterion 9: Information appearing on the EU Ecolabel

The logo should be visible and legible. The EU Ecolabel registration/licence number must appear on the product and it must be legible and clearly visible. Optional label with text box shall contain the following text:

— Harm to aquatic life is limited
— Amount of hazardous substances is restricted
— Tested for wash performance

Assessment and verification:

The applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a signed declaration of compliance.

7 PROPOSED EU ECOLABEL CRITERIA FOR ALL PURPOSE CLEANERS AND SANITARY CLEANERS

7.1 Name, scope and definition

The product group 'Hard Surface Cleaning Products' shall comprise all-purpose cleaners, window cleaners and sanitary cleaners falling under the scope of Regulation (EC) No 648/2004 of the European Parliament and of the Council on detergents.

- All-purpose cleaners comprising detergent products intended for routine cleaning of hard surfaces such as walls, floors and other fixed surfaces including those in kitchens.
- Window cleaners comprising specific detergents intended for the routine cleaning of windows, glass and other highly polished surfaces.
- Sanitary cleaners comprising detergents products intended for the routine removal, including by scouring, of dirt and/or deposits in sanitary facilities, such as laundry rooms, toilets, bathrooms, showers.

The product group shall cover products for both private and professional use, intended for indoor use and sold either in ready-to-use (to be used without dilution in water) or undiluted form. Products shall be mixtures of chemical substances.
Routine cleaning refers to cleaning performed at least monthly to remove everyday grime, soil, dust, grease, scum, slime, limescale, food and sanitary residues.

7.2 Definitions

(1) "ingoing substances" means substances intentionally added, by-products and impurities from raw materials in the final product formulation (including water-soluble foil, if applicable);

(2) "undiluted product" means a product that is diluted in water prior to use;

(3) "ready-to-use (RTU) product" means a product that should not be diluted in water before use;

(4) "primary packaging" means packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase in direct contact with the content, including label where applicable;

(5) "microplastics" means plastic micro beads used as a scrub/abrasive material in detergent and cleaning products.

7.3 Assessment and verification requirements and measurement thresholds

A) Requirements

The specific assessment and verification requirements are indicated within each criterion.
Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or their supplier(s) as appropriate.

Competent Bodies shall preferentially recognise attestations which are issued by bodies accredited according to the relevant harmonised standard for testing and calibration laboratories and verifications by bodies that are accredited according to the relevant harmonised standard for bodies certifying products, processes and services.

Where appropriate, test methods other than those indicated for each criterion may be used if the Competent Body assessing the application accepts their equivalence.
Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications.
As pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

The Appendix I makes reference to the "Detergent Ingredient Database" list (DID list) which contains the most widely used ingoing substances in detergents and cosmetics formulations. It shall be used for deriving the data for the calculations of the Critical Dilution Volume (CDV) and for the assessment of the biodegradability of the ingoing substances. For substances not present on the DID list, guidance is given on how to calculate or extrapolate the relevant data. The latest version of the DID list is available from the EU Ecolabel website or via the websites of the individual competent bodies.

The following information shall be provided to the competent body:
(i) The list of all ingoing substances indicating trade name, chemical name, CAS no., DID no., the ingoing quantity, the function and the form present in the final product formulation (including foil) at or above the following concentrations:
- preservatives, fragrances and colouring agents - regardless of concentration,
- other ingoing substances - 0,010% by weight;

For each ingoing substance listed, the safety data sheet in accordance with Regulation (EC) No 1907/2006 of the European Parliament and of the Council shall be provided.
(ii) If a supplier prefers not to disclose the ingoing substances included in a mixture to the applicant, the information can be sent directly to the Competent Body by the supplier;
(iii) In exceptional cases, if the ingoing substances included in a mixture are unknown, the applicant can supply the information requested in (i) for the mixture.

B) Measurement thresholds

Compliance with the ecological criteria is required for all ingoing substances as specified in Table 18.

Table 18. Threshold levels applicable to ingoing substances by criterion for xxxx Detergents

Criterion name		surfactants	preservatives	colouring agents	fragrances	other
Toxicity to aquatic organisms		≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Biodegradability	Surfactants	≥ 0,010	x	x	x	x
	Organics	≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Sustainable sourcing of palm oil		≥ 0,010	x	x	x	x
Excluded or	Specified	no limit*	no limit*	no limit*	no limit*	no limit*

limited substances and mixtures	excluded and limited subst.					
	Hazardous subst.	≥0,010	≥0,010	≥0,010	≥0,010	≥0,010
	SVHCs	no limit*	no limit*	no limit*	no limit*	no limit*
	Fragrances	x	x	x	no limit*	x
	Preserva-tives	x	no limit*	x	x	x
	Colourants	x	x	no limit*	x	x
	Enzymes	x	x	x	x	≥ 0,010

* "no limit" means: regardless of the concentration, all substances intentionally added, by-products and impurities from raw materials (analytical limit of detection)

7.4 Reference dosage

The following dosages are taken as the reference dosage for the calculations aiming at documenting compliance with the EU Ecolabel criteria and for testing of cleaning ability:

Ready-to-use (RTU) products	**1 litre of RTU product**
Undiluted products	Dosage recommended by the manufacturer for preparing 1 litre of cleaning solution for cleaning normally soiled surfaces (indicated in g/l cleaning solution or ml/l cleaning solution).

7.5 Criteria for hard-surface cleaning products

7.5.1 Criterion 1: Toxicity to aquatic organisms

The critical dilution volume (CDV) of the product must not exceed the following limits for the reference dosage:

Product type	Limit CDV
All-purpose cleaners, RTU	300 000
All-purpose cleaners, undiluted	30 000
Window cleaners, RTU	48 000
Window cleaners, undiluted	4 800
Sanitary cleaners, RTU	700 000
Sanitary cleaners, undiluted	70 000

Assessment and verification:
The applicant shall provide the calculation of the CDV of the product. A spreadsheet for calculating of the CDV value is available on the EU Ecolabel website.

The CDV is calculated for all ingoing substances (i) in the product using the following equation:

$$CDV = \sum CDV(i) = 1000 \cdot \sum dosage(i) \cdot \frac{DF(i)}{TF(i)}$$

Where:
dosage(i): weight (g) of the substance or mixture i in the reference dose,
DF(i): degradation factor for the substance or mixture i
TF(i): toxicity factor for the substance or mixture i
The values of DF(i) and TF(i) shall be as given in the DID list Part A (Appendix I). If an ingoing substance is not included in the DID list Part A, the applicant shall estimate the values following the approach described in the DID list Part B (Appendix I).

7.5.2 Criterion 2: Biodegradability

(a) Biodegradability of surfactants
All surfactants shall be readily degradable (aerobically).
All surfactants classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable.

(b) Biodegradability of organic compounds
The content of organic substances in the product that are aerobically non-biodegradable (not readily biodegradable aNBO) or anaerobically non-biodegradable (anNBO) shall not exceed the following limits for a reference dosage:
[Note: Values will be discussed at the 2nd AHWG meeting based on the information provided by licence holders and other stakeholders / consultation ongoing]

Product type	aNBO x,xx g	anNBO x,xx g
All-purpose purpose cleaners (RTU)		
All-purpose cleaners (undiluted)		
Window cleaners (RTU)		
Window cleaners (undiluted)		
Sanitary cleaners (RTU)		
Sanitary cleaners (undiluted)		

Assessment and verification:

The applicant shall provide documentation for the degradability of surfactants, as well as the calculation of aNBO and anNBO for the product. A spreadsheet for calculating aNBO and anNBO values is available on the EU Ecolabel website.

For both surfactants and aNBO and anNBO values, reference shall be done to the DID list.

For ingoing substances which are not included in the DID list, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided as described in the Appendix x, which is available on the EU Ecolabel website.

In the absence of documentation in accordance with the above requirements, an ingoing substance other than a surfactant may be exempted from the requirement for anaerobic degradability if one of the following three alternatives is fulfilled:

1. Readily degradable and has low adsorption (A < 25 %);
2. Readily degradable and has high desorption (D > 75 %);
3. Readily degradable and non-bioaccumulating.

Testing for adsorption/desorption may be conducted in accordance with OECD guidelines 106.

7.5.3 Criterion 3: Sustainable sourcing of palm oil, etc.

Ingoing substances used in the products which are derived from palm oil or palm kernel oil shall be sourced from plantations that meet the criteria for sustainable management that have been developed by multi-stakeholder organisations that have a broad membership including NGOs, industry and government.

Assessment and verification:

The applicant shall provide third-party certifications that the palm oil and palm kernel oil used in the manufacturing of the product originates from sustainably managed plantations. Certifications accepted shall include RSPO (by identity preserved, segregated or mass balance) or any equivalent scheme based on multi-stakeholder sustainable management criteria. For chemical derivatives of palm oil and palm kernel oil, it is acceptable to demonstrate sustainability through book and claim systems such as GreenPalm or equivalent.

7.5.4 Criterion 4: Excluded and restricted substances

7.5.4.1 Sub-criterion (a): Specified excluded and restricted substances

(i) Excluded substances

Substances indicated in Table 47 shall not be included in the product formulation:
Table 47. List of substances excluded from detergents and cleaning products regardless of concentration

- APEO and ADP
- Atranol
- Chloroatranol
- Diazolinidylurea
- DTPA
- EDTA
- Formaldehyde
- Hydroxyisohexyl 3-cyclohexene carboxaldehyde (HICC)
- Microplastics
- Nanosilver
- Nitromusks and polycyclic musks
- Phosphates
- Per-fluorinated alkylates
- Quaternary ammonium salts not readily biodegradable
- Reactive chlorine compounds
- Sodium hydroxyl methyl glycinate
- Triclosan
- 5-bromo-5-nitro-1,3-dioxane
- 2-bromo-2-nitropropane-1,3-diol
- Aromatic solvents
- Halogenated solvents

(ii) Restricted substances

Substances listed below shall not be included in the product formulation above the specified mass concentration:

- *Phosphorus compounds* shall not the present in quantities ≥0.5% in mass in industrial and institutional all purpose cleaners and sanitary cleaners and shall not be intentionally added in household all purpose cleaners, household sanitary cleaners and window cleaners

The calculation of the elemental phosphorus in the product shall be calculated on the basis of 1litre of washing water and considering the dosage of the product recommended by the manufacturer for the cleaning of normally soiled surfaces (for products diluted in water prior to use) or per 100g of product (for products used without prior dilution) taking into account all substances containing phosphorus

- *Volatile organic compounds (VOCs)** shall not be present in quantities ≥1% by weight in products as used (e.g. after dilution, if applicable), unless otherwise specified in Table 74 for products with specific uses. Volatile organic compounds shall not be present in quantities ≥ 12% by weight in products as sold (e.g. in undiluted form, if applicable), unless otherwise specified in Table 74 for products with specific uses.

Table 74. Specific VOC content limits depending on the cleaning products

Cleaning product	Limits by weight of VOC	
	As used	As sold
Window cleaner	< 3%	< 25%
Degreaser	< 3%	< 25%
Industrial and institutional hard surface cleaner	< 5%	< 25%
Bathroom cleaner	< 1%	< 25%

*VOCs means any organic compound having an initial boiling point less than or equal to 250°C measured at a standard pressure of 101,3 kPa or having at 293,15K a vapour pressure higher than 0,01 kPa, demonstrated through laboratory testing or calculation from records of the amounts of constituents used to make the product where volatile means vapour pressure > 0,01kPa at 293.15K

- *Fragrance* substances subject to the declaration requirement provided in Detergents Regulation (EC) No 684/2004 shall not be present in quantities ≥ 0,010 % (≥ 100 ppm) per substance

Assessment and verification:
The applicant shall provide:
- a signed declaration of compliance supported by declarations from suppliers, if appropriate, confirming that the listed substances have not been included in the product formulation, either regardless of mass concentration (substances listed in (i)) or above specified concentration (substances listed in (ii)),
- for phosphorus: a) information on the complexing agent in the product (detail information of the type of phosphorus-containig substances added as ingredients), b) calculation of the product's total P-content.
- For VOCs: a) test reports or b) list of the detergent ingredients and copies of the material safe data sheets of each organic volatile solvent together with details of the calculations of the total concentration of volatile organic compounds with a vapour pressure higher than 0,01kPa at 293.15K.

7.5.4.2 Sub-criterion (b): Hazardous substances

The final product shall not be classified and labelled as being acutely toxic, a specific target organ toxicant, a respiratory or skin sensitiser, carcinogenic, mutagenic or toxic for reproduction, or hazardous to the environment, in accordance with CLP Regulationa.

The product shall not contain ingoing substances meeting the criteria for classification as toxic, hazardous to the environment, respiratory or skin sensitizers, carcinogenic, mutagenic or toxic for reproduction in accordance with CLP Regulationa and as interpreted according to the hazard statements listed in Table 57.

Any ingoing substance present at a concentration above 0,010% w/w in the product shall meet this requirement. Where stricter, the generic or specific concentration limits determined in accordance with Article 10 of CLP Regulation shall prevail to the cut-off limit value of 0,010% w/w.

Table 57. Restricted hazard classifications and their categorisation

Acute toxicity	
Category 1 and 2	**Category 3**
H300 Fatal if swallowed	H301 Toxic if swallowed
H310 Fatal in contact with skin	H311 Toxic in contact with skin
H330 Fatal if inhaled	H331 Toxic if inhaled
H304 May be fatal if swallowed and enters airways	EUH070 Toxic by eye contact
Specific target organ toxicity	
Category 1	**Category 2**
H370 Causes damage to organs	H371 May cause damage to organs
H372 Causes damage to organs through prolonged or repeated exposure	H373 May cause damage to organs through prolonged or repeated exposure
Respiratory and skin sensitisation	

Category 1A	Category 1B
H317: May cause allergic skin reaction	H317: May cause allergic skin reaction
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	**Category 2**
H340 May cause genetic defects	H341 Suspected of causing genetic defects
H350 May cause cancer	H351 Suspected of causing cancer
H350i May cause cancer by inhalation	
H360F May damage fertility	H361f Suspected of damaging fertility
H360D May damage the unborn child	H361d Suspected of damaging the unborn child
H360FD May damage fertility. May damage the unborn child	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child
H360Fd May damage fertility. Suspected of damaging the unborn child	H362 May cause harm to breast fed children
H360Df May damage the unborn child. Suspected of damaging fertility	
Hazardous to the aquatic environment	
Category 1 and 2	**Category 3 and 4**
H400 Very toxic to aquatic life	H412 Harmful to aquatic life with long-lasting effects
H410 Very toxic to aquatic life with long-lasting effects	H413 May cause long-lasting effects to aquatic life
H411 Toxic to aquatic life with long-lasting effects	
Hazardous to the ozone layer	
H420 Hazardous to the ozone layer	

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications in accordance with article 15 of CLP Regulationa. The hazard statements generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall apply.

Ingoing substances which change their properties upon processing (e.g. become no longer bioavailable or undergo chemical modification) so that the hazards no longer apply and that any unreacted residual content of the hazardous substances is less than 0,010% w/w are exempted from this criterion x(b).

This criterion does not apply to ingoing substances covered by Article 2(7)(b) of the REACHb which sets out criteria for exempting substances within Annex V from the registration, downstream user and evaluation requirements. In order to determine if this exclusion applies, the applicant shall screen any ingoing substance present at a concentration above 0,010% w/w.

Substances and mixtures included in Table 10 are exempted from the requirement of this criterion.

Table 10. Derogated substances

Substance	Hazard statement
Surfactants in total concentrations <25% in the final product	H400: Very toxic to aquatic life
	H412: Harmful to aquatic life with long-lasting effects
Subtilisin	H400: Very toxic to aquatic life H411: Toxic to aquatic life with long-lasting effects
Enzymes(*)	H317: May cause allergic skin reaction
	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
NTA as an impurity in MGDA and GLDA(**)	H351: Suspected of causing cancer
Fragrances	H412: Harmful to aquatic life with long-lasting effects

Preservatives	[ongoing consultation]

(*) Including stabilisers and other auxiliary substances in the preparations
(**) In concentrations lower than 0.2 % in the raw material as long as the total concentration in the final product is lower than 0.10 %.

Assessment and verification:

The applicant shall demonstrate compliance with criterion x(b) for the final product and for any ingoing substance present at concentrations greater than 0,010 % in weight in the final product. A declaration of compliance shall be provided by the applicant supported, where appropriate, by the declarations from their supplier(s) that none of these substances meets the criteria for classification with one or more of hazard statements listed in Table 57 in the form(s) and physical state(s) they are present in the final product. Material safety data sheet for the final product shall also be provided.

The following technical information related to the form(s) and physical state(s) of the ingoing substances as present in the product shall be provided to support the declaration of non-classification:

(i) For substances that have not been registered under REACH and/or which do not yet have a harmonised CLP classification: Information meeting the requirements listed in Annex VII to REACH;

(ii) For substances that have been registered under REACH and which do not meet the requirements for CLP classification: Information based on the REACH registration dossier confirming the non- classified status of the substance;

(iii) For substances that have a harmonised classification or are self-classified: safety data sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to REACH;

(iv) In the case of mixtures: safety data sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under CLP Regulation together with information relevant to the mixtures hazard classification according to Annex II to REACH.

For substances listed in Annexes IV and V to REACH, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of REACH, a declaration to this effect by the applicant shall suffice to comply with criterion x(b).

A declaration on the presence of ingoing substances that fulfil the derogation conditions shall be provided by the applicant, supported, where appropriate, by declarations from their supplier(s). Where required for the derogation, the applicant shall confirm the concentrations of these substances in the final product.

7.5.4.3 Sub-criterion (c): Substances of very high concern (SVHCs)

The final product shall not contain any ingoing substances that have been identified according to the procedure described in Article 59(1) of REACH, which establishes the candidate list for substances of very high concern.

Assessment and verification:

The applicant shall provide a declaration of compliance, supported by declarations from their suppliers, as appropriate, on non-presence of the candidate list substances.

Reference to the latest list of substances of very high concern shall be made on the date of application.

7.5.4.4 Sub-criterion (d): Fragrances

Any ingoing substance added to the product as a fragrance shall be manufactured and handled following the code of practice of the International Fragrance Association (IFRA) available at http://www.ifraorg.org. The recommendations of the IFRA Standards concerning prohibition, restricted use and specified purity criteria for substances shall be followed by the manufacturer.

Assessment and verification:

The applicant, their supplier or fragrance manufacturer, as appropriate, shall provide a signed declaration of compliance.

7.5.4.5 Sub-criterion (e): Preservatives

(i) The product may only include preservatives in order to preserve the product, and in the appropriate dosage for this purpose alone. This does not refer to surfactants, which may also have biocidal properties.

(ii) The product may contain preservatives provided that they are not bio-accumulating. A preservative is considered to be not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used.

(iii) It is prohibited to claim or suggest on the packaging or by any other communication that the product has an antimicrobial or disinfecting effect.

Assessment and verification:

The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any preservative added, and information on its BCF and/or log Kow values. The applicant shall provide also artwork of the packaging.

7.5.4.6 Sub-criterion (f): Colouring agents

Colouring agents in the product shall not be bio-accumulating.

A colouring agent is considered not bio-accumulating if BCF < 100 or log Kow < 3,0. If both BCF and log Kow values are available, the highest measured BCF value shall be used. In the case of colouring agents approved for use in food, it is not necessary to submit documentation of bio-accumulation potential.

Assessment and verification:

The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any colorant added together with information on its BCF and/or log Kow value, or documentation to ensure that the colouring agent is approved for use in food.

7.5.4.7 Sub-criterion (g): Enzymes

Only enzyme encapsulates (in solid form) and enzyme liquids/slurries shall be used.

Assessment and verification:

The applicant shall provide a declaration of compliance supported by copies of the safety data sheets of any enzyme added.

7.5.4.8 Sub-criterion (h): Micro-organisms

(i) *Identification*: all intentionally added micro-organisms shall have an American Type Culture Collection (ATCC) number or belong to a collection of an International Depository Authority (IDA)

(ii) *Safety*: all intentionally added micro-organisms shall belong to:
Risk Group I as defined by the Directive 2000/54/EC – biological agents at work
The Qualified Presumption of Safety (QPS) list issued by the European Food Safety Authority (EFSA)

(iii) *Absence of contaminants*: pathogenic micro-organisms, as defined below, shall not be in any of the strains included or in the finished product when screened using the indicated test methods or equivalent:

E. Coli, test method ISO 16649-3:2005
Streptococcus (Enterococcus), test method ISO 21528-1:2004
Staphylococcus aureus, test method ISO 6888-1
Bacillus cereus, test method ISO 7932:2004 or ISO 21871

Salmonella, test method ISO6579:2002 or ISO 19250

(iv) *all intentionally* added micro-organisms shall not be GMO
(v) *Antibiotic susceptibility*: all intentionally added micro-organisms shall be susceptible to each of the five major antibiotic classes (aminoglycoside, macrolide, beta-lactam, tetracycline and fluoroquinolones) in accordance with the EUCAST disk diffusion method or equivalent.
(vi) *Microbial count*: products in their in-use form shall have a standard plate count equal or greater than 1x105 Colony Forming Units (CFU) per ml months according to ISO 4833-1:2014.
(vii) *Shelf life*: the minimum shelf life of the product shall not be lower than 24 months and the microbial count shall not decrease by more than 10% every 12 months according to ISO 4833-1:2014.
(viii) *User information*: the product label shall include the following information:
That the product contains micro-organisms
That the product shall not be used with a spray trigger mechanism
That the product should not be used on surfaces in contact with food
An indication on the shelf life of the product

Assessment and verification:
The applicant shall provide:
(i) the name (to the strain) and identification of all micro-organisms contained in the product (ATCC or IDA numbers)
(ii) documentation demonstrating that all micro-organisms belong to Risk Group I and the QPS list
(iii) documentation demonstrating that the pathogenic micro-organisms are not present in the product
(iv) documentation demonstrating that all micro-organisms are not GMO
(v) documentation demonstrating that all micro-organisms are susceptible to each of the five major antibiotic classes indicated
(vi) documentation of CFU per ml of in-use solution (for undiluted products, the dilution ratio recommended for "normal" cleaning shall be used)
(vii) documentation of CFU per ml of in-use solution every 12 months for a product stored until the end of its shelf life. If the applicant is seeking an EU Ecolabel for a new formulation and such data is not available, the applicant shall provide the Competent Body with the information within one year.
(viii) a copy of the product's label

7.5.5 Criterion 5: Packaging

(a) Products sold in spray bottles
Sprays containing propellants must not be used. Products packaged in trigger sprays must be sold as a part of a refillable system.

Assessment and verification:
The applicant or retailer shall document that refills shall be available for purchase on the market.
(b) Weight/utility ratio (WUR)
The weight/utility ratio (WUR) of the product shall be calculated for the primary packaging only and shall not exceed the following values for the reference dosage:

Product type	WUR
Undiluted products	15 g
RTU products	150 g
RTU products sold in bottles with trigger sprays	200 g

Plastic/paper/cardboard packaging containing more than 80 % recycled materials is exempted from this requirement.

Assessment and verification:
The applicant shall provide the calculation of the WUR of the product. If the product is sold in different packaging (i.e. with different volumes), the calculation shall be submitted for each packaging size for which

the EU Ecolabel shall be awarded. In the case of trigger sprays and the allocation of weight to the primary packaging, this shall be on the basis of pan-European sales data for the product, indicating unit sales of each.
The WUR is calculated as follows:

$$WUR = \sum((W_i + U_i)/(D_i * R_i)$$

Where:
Wi: weight (g) of the primary packaging (i),
Ui: weight (g) of non-recycled packaging in the primary packaging (i). Ui = Wi unless the applicant can document otherwise,
Di: number of reference doses contained in the primary packaging (i),
Ri: number of times that the primary packaging (i) can be refilled and used for the same purpose. Ri = 1 (packaging is not reused for the same purpose) unless the applicant can document a higher number.
The applicant shall provide a signed declaration for the content of recycled material, along with relevant documentation. Packaging is regarded as recycled if the raw material used to make the packaging has been collected from packaging manufacturers at the distribution stage or at the consumer stage. Where the raw material is industrial waste from the material manufacturer's own production process, then the material will not be regarded as recycled.

(c) Design for recycling
Plastic packaging shall be designed to facilitate effective recycling by avoiding potential contaminants and incompatible materials that are known to impede separation or reprocessing or to reduce the quality of recyclate. The label or sleeve, closure and, where applicable, barrier coatings shall not comprise, either singularly or in combination the materials and components listed in Table 72. Pumps are exempted from this requirement.

Table 72. Materials and components excluded from packaging elements

Packaging element	Excluded materials and components*
Label or sleeve	- PS label or sleeve in combination material used with a PET, PP or HDPE bottle - PVC label or sleeve in combination with a PET, PP or HDPE bottle - PETG label or sleeve in combination with a PET bottle - Sleeves made of different polymer than the bottle - Labels or sleeves that are metallised or are welded to a packaging body (in mould labelling)
Closure	- PS closure in combination a with a PET, HDPE or PP bottle - PVC closure in combination with a PET, PP or HDPE bottle - PETG closures and/or closure material with density of above 1 g/cm3 in combination with a PET bottle - Closures made of metal, glass, EVA - Closures made of silicone. Exempted are silicone closures with a density < 1 g/cm3 in combination with a PET bottle and silicone closures with a density > 1g/cm3 in combination with PEHD or PP bottle - Metallic foils or seals which remain fixed to the bottle or its closure after the product has been opened
Barrier coatings	Polyamide, EVOH, functional polyolefins, metallised and light blocking barriers

* EVA – Ethylene Vinyl Acetate, EVOH – Ethylene vinyl alcohol, HDPE – High-density polyethylene, PET – Polyethylene terephtalate, PETG – Polyethylene terephthalate glycol-modified, PP – Polypropylene, PS – Polystyrene, PVC – Polyvinylchloride

Assessment and verification:
The applicant shall submit a signed declaration of compliance specifying the material composition of the packaging including the container, label or sleeve, adhesives, closure and barrier coating, as appropriate, and a sample of primary packaging.

7.5.6 Criterion 6: Fitness for use

The product shall be fit for use, meeting the needs of the consumers. Products intended for non-professional use should be tested through a laboratory test. The test shall be preferentially performed by a laboratory complying with the relevant harmonized standards for testing and calibration laboratories. Products intended for industrial and institutional use should be tested through a user test.

The cleaning ability must be equivalent to or better than that of a reference product (market product or generic reference product representative of the current products on the market), approved by a competent body and better than water alone. The generic reference detergent for toilet cleaners shall be the one prescribed in IKW performance test 'Recommendation for the quality assessment of acidic toilet cleaners' (SÖFW-Journal, 126, 11, pp. 50-56, 2000).

Assessment and verification:

The applicant shall submit tests that must be carried out and reported within specified parameters as stated in the framework described in 'Framework for testing the performance of all-purpose cleaners, window cleaners and sanitary cleaners' that can be found here: http://ec.europa.eu/environment/ecolabel/documents/performance_test_cleaners.pdf

Information shall be provided on the compliance within the laboratory requirements included in the relevant harmonized standards for testing and calibration laboratories, if appropriate

FRAMEWORK FOR TESTING THE PERFORMANCE OF ALL-PURPOSE CLEANERS, WINDOW CLEANERS AND SANITARY CLEANERS

Version 1.3 of September 2012

The performance test can be conducted through a laboratory test for products intended to be used in the household sector or a user test for products the manufacturers claim to be for an industrial and institutional use. In addition to the performance test, it is the responsibility of the applicant to ensure that the cleaner is safe to use on the intended surface(s). The conditions for both types of test are described in the following sections.

1. Laboratory tests

The aim of the laboratory test is to confirm that the test product cleans as well as or better than a comparative reference. All products should be tested in their "as used" form and at the recommended dosage for normal soil or normal use.

General framework requirements

• The test product and the reference product shall be of the same product category (RTU, concentrated, etc) and be designed for the same use (WC, kitchen, sanitary, flooring, hard surfaces, glass, etc)

• For all-purpose cleaners and window cleaners the reference product may be either a marketed ~~leading~~ product or a generic formulation.

• For sanitary cleaners (toilet cleaners) the reference detergent shall be the one prescribed at the IKW webpage: http://www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-WC-Reiniger-Englisch.pdf.

• If a marketed reference product is used (all-purpose cleaners, bathroom cleaner, kitchen cleaner and window cleaners), must be approved by the competent body, and the trade name must be available to the public.

• If a generic formulation is used (all-purpose cleaners, bathroom cleaner, kitchen cleaner and window cleaners), it must have a composition which is representative for the products on the market. Furthermore, the generic reference product must be approved by the competent body and the exact formulation must be publicly available free of charge.

• The dosages used shall be the recommended dosage for normal soil or normal use. If no recommended dosage is stated for the reference product, the same dosage must be used for both the test product and the reference product.

• If a dosage interval is given, the lowest recommended dosage must be used in the test.

• The soil mixture must be relevant for the use of the product, homogeneous and, if prepared artificially, based on well-described substances. Enough soil for the whole test must be prepared in a single batch. The IKW-tests included at the end of this framework may be used to prepare the soil mixture

• For each product the following soil-removing effects shall be documented.

Cleaner	Soiling	Cleaner	Soiling
Bathroom cleaner	Fat removing Descaling (limesoap and limescale Particulate matter	Hard surface cleaner	Fat removing Particulate matter
Toilet cleaner	Fat removing Descaling (limescale Particulate matter	Window cleaner	Fat removing (finger-prints) Particulate matter Strip-less drying
Kitchen cleaner	Fat removing Burnt soiling Particulate matter Descaling (limesoap and limescale		

• The primary cleaning function of window cleaners is to remove ‘easy-to-remove' fatty soil (fatty fingerprints) and particulate matter. As a result, the very stubborn fatty soil that is used for all purpose cleaners in the IKW test is not relevant and should not be used for these cleaners. As leaving a clean and stripe-less surface is also one of the main performance aspects of window cleaners, the method for stripe-less drying as described in the IKW method for all purpose cleaners could be used for window cleaners. Here the window cleaner under test should be as good as a marketed-product and better than water of a defined hardness.
• Sanitary cleaners include bathroom cleaners, toilet cleaners and kitchen cleaners. For bathroom cleaners, both limesoap and limescale removal shall be documented. For acidic toilet cleaners, only limescale removal shall be documented. For kitchen cleaners fat removing effects shall be documented.
• The washing procedure must reflect realistic use conditions and can be manual or by machinery.

Testing requirements
• The assessment of cleanliness must include testing and comparison of the test product with a reference product.
• Each product must be tested in at least ~~five~~ fifteen repetitions (see documentation requirements).
• The quantity of soil applied to tiles or another substrate must be the same for each tile or substrate-part, weighed in grams to one decimal point.
• The order of testing of the products shall be randomised.
• The test must be capable of generating results that provide a measure of the cleaning performance according to the product tested. Cleaning performance can be measured visually, photometrically (e.g. measuring reflectance), gravimetrically or by means of another relevant method. The method of measurement, including a possible scoring system, must be decided in advance.
• A water test shall be performed using the same quantity of water as in the other tests. Data from the water test shall be collated together the other test data. The test and reference product must both perform better than water alone.

Documentation requirements
A detailed test report shall be submitted to the competent body, including information on:
• The dosages used for the test product and the reference product.
• Common application area(s) for the test and the reference product.
• Justification of the choice of the reference product with respect to its ~~position~~ availability on the market and why this product was chosen as reference product.
• Type(s) of surface(s) used in the test and their relevance.
• Description of the soil mixture used in the test, together with an argumentation for its relevance in relation to the testing of cleaning performance.
• Description of the procedures for soiling, washing and measurement of cleaning performance.
• Calculation and statistical comparison procedures.
• All raw data used in the testing and calculations.
• For the test product to be considered to have fulfilled the performance requirements its results must be positive in all of the repetitions. If the result is less than all positive, fifteen new repetitions must be performed. Of these 30 repetitions, a ratio (positive results/ all the results) of 0.8 of positive results must be achieved. In case lime scale removal is tested for an acidic toilet cleaner versus the above specified reference product, a positive outcome of the test is associated with a performance that reaches at least 0.7 of that of the reference cleaner.
• As an alternative the applicant may use statistical methods and demonstrate with a one-sided 95 % confidence range that the test product is as good as or better than the reference product.

Note on tests

The IKW-test ‘Recommendation for the quality assessment of acidic toilet cleaners (SÖFWJournal, 126, 11, pp. 50-56, 2000) may be used to confirm the performance requirements for acidic toilet cleaners.–IKW-test is available at: http://www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-WC-Reiniger-Englisch.pdf

The IKW test 'Recommendations for the quality assessment of bathroom cleaners', SÖFW Journal, 129 (2003) 42-48 may be used to confirm performance requirements for bathroom cleaners. IKW-test is available at: http://www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-Badreiniger-englisch.pdf

The IKW test 'Recommendation for the Quality Assessment of the Product Performance of All Purpose Cleaners', SÖFW Journal, 130 (2005) 54-66. may be used to confirm performance requirements for all purpose cleaners. IKW-test is available at: http://www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-Allzweck-englisch.pdf

2. User tests

The aim of the consumer test is to show whether the test product cleans as good as or better than a comparative reference product. User test is recommended for products intended for industrial and institutional use

General framework requirements
• For testing of professional products, responses must be received from at least five professional users, randomly selected in the sales region and normally using the reference product.
• The test product and the reference product should be of the same product category.
• The dosages used must be the dose recommended by the manufacturer.
• The test must be performed on the type(s) of surface relevant in relation to the recommendations on the label.
• The test period must allow for at least five uses of the test product.

Testing requirements
• Effectiveness of the product under test must be assessed on the ability of the product to remove soil and leave a clean surface.
• The test centers or the person conducting the testing must reply to the question 'How effective do you consider the test product to be compared to the product you normally use?'— or equivalent. At least three possibilities for a response must be available, e.g. 'poorer', 'as good as' and 'better'.
• At least 80 % of the test persons/test centers must assess the product to be 'as good as' or 'better' than the reference product.

Documentation requirements
A detailed test report must be submitted to the competent body, including information/documentation on:
• The selection of the test persons.
• The information provided by the test persons and a summary describing how the testing was performed.
• The type of surface(s) the product was tested on.
• Calculation and documentation showing that at least 80 % of the test persons/centers assess the product to be as good as or better than the reference product.
• For each test person/center, the following information must be available, e.g. in the form of answers to a questionnaire:
    - o The dosage used by the test person/center
    - o The name of the reference product
    - o A statement declaring that the product has been tested at least five times
    - o The result of the comparison of the test product and the reference product.

FRAMEWORK FOR TESTING THE PERFORMANCE OF ALL-PURPOSE CLEANERS, WINDOW CLEANERS AND SANITARY CLEANERS
Version 1.3 of September 2012

The performance test can be conducted through a laboratory test for products intended to be used in the household sector or a user test for products the manufacturers claim to be for an industrial and institutional use. In addition to the performance test, it is the responsibility of the applicant to ensure that the cleaner is safe to use on the intended surface(s). The conditions for both types of test are described in the following sections.

1. Laboratory tests

The aim of the laboratory test is to confirm that the test product cleans as well as or better than a comparative reference. All products should be tested in their "as used" form and at the recommended dosage for normal soil or normal use.

General framework requirements
• The test product and the reference product shall be of the same product category (RTU, concentrated, etc) and be designed for the same use (WC, kitchen, sanitary, flooring, hard surfaces, glass, etc)
• For all-purpose cleaners and window cleaners the reference product may be either a marketed ~~leading~~ product or a generic formulation.
• For sanitary cleaners (toilet cleaners) the reference detergent shall be the one prescribed at the IKW webpage: http://www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-WC-Reiniger-Englisch.pdf.
• If a marketed reference product is used (all-purpose cleaners, bathroom cleaner, kitchen cleaner and window cleaners), must be approved by the competent body, and the trade name must be available to the public.
• If a generic formulation is used (all-purpose cleaners, bathroom cleaner, kitchen cleaner and window cleaners), it must have a composition which is representative for the products on the market. Furthermore, the generic reference product must be approved by the competent body and the exact formulation must be publicly available free of charge.
• The dosages used shall be the recommended dosage for normal soil or normal use. If no recommended dosage is stated for the reference product, the same dosage must be used for both the test product and the reference

product.
• If a dosage interval is given, the lowest recommended dosage must be used in the test.
• The soil mixture must be relevant for the use of the product, homogeneous and, if prepared artificially, based on well-described substances. Enough soil for the whole test must be prepared in a single batch. The IKW-tests included at the end of this framework may be used to prepare the soil mixture
• For each product the following soil-removing effects shall be documented.

Cleaner	Soiling	Cleaner	Soiling
Bathroom cleaner	Fat removing Descaling (limesoap and limescale Particulate matter	Hard surface cleaner	Fat removing Particulate matter
Toilet cleaner	Fat removing Descaling (limescale Particulate matter	Window cleaner	Fat removing (finger-prints) Particulate matter Strip-less drying
Kitchen cleaner	Fat removing Burnt soiling Particulate matter Descaling (limesoap and limescale		

• The primary cleaning function of window cleaners is to remove 'easy-to-remove' fatty soil (fatty fingerprints) and particulate matter. As a result, the very stubborn fatty soil that is used for all purpose cleaners in the IKW test is not relevant and should not be used for these cleaners. As leaving a clean and stripe-less surface is also one of the main performance aspects of window cleaners, the method for stripe-less drying as described in the IKW method for all purpose cleaners could be used for window cleaners. Here the window cleaner under test should be as good as a marketed-product and better than water of a defined hardness.
• Sanitary cleaners include bathroom cleaners, toilet cleaners and kitchen cleaners. For bathroom cleaners, both limesoap and limescale removal shall be documented. For acidic toilet cleaners, only limescale removal shall be documented. For kitchen cleaners fat removing effects shall be documented.
• The washing procedure must reflect realistic use conditions and can be manual or by machinery.

Testing requirements
• The assessment of cleanliness must include testing and comparison of the test product with a reference product.
• Each product must be tested in at least ~~five~~ fifteen repetitions (see documentation requirements).
• The quantity of soil applied to tiles or another substrate must be the same for each tile or substrate-part, weighed in grams to one decimal point.
• The order of testing of the products shall be randomised.
• The test must be capable of generating results that provide a measure of the cleaning performance according to the product tested. Cleaning performance can be measured visually, photometrically (e.g. measuring reflectance), gravimetrically or by means of another relevant method. The method of measurement, including a possible scoring system, must be decided in advance.
• A water test shall be performed using the same quantity of water as in the other tests. Data from the water test shall be collated together the other test data. The test and reference product must both perform better than water alone.

Documentation requirements
A detailed test report shall be submitted to the competent body, including information on:
• The dosages used for the test product and the reference product.
• Common application area(s) for the test and the reference product.
• Justification of the choice of the reference product with respect to its ~~position~~ availability on the market and why this product was chosen as reference product.
• Type(s) of surface(s) used in the test and their relevance.
• Description of the soil mixture used in the test, together with an argumentation for its relevance in relation to the testing of cleaning performance.
• Description of the procedures for soiling, washing and measurement of cleaning performance.
• Calculation and statistical comparison procedures.
• All raw data used in the testing and calculations.
• For the test product to be considered to have fulfilled the performance requirements its results must be positive in all of the repetitions. If the result is less than all positive, fifteen new repetitions must be performed. Of these 30 repetitions, a ratio (positive results/ all the results) of 0.8 of positive results must be achieved. In case lime scale removal is tested for an acidic toilet cleaner versus the above specified reference product, a positive outcome of the test is associated with a performance that reaches at least 0.7 of that of the reference cleaner.
• As an alternative the applicant may use statistical methods and demonstrate with a one-sided 95 % confidence range that the test product is as good as or better than the reference product.

Note on tests

The IKW-test 'Recommendation for the quality assessment of acidic toilet cleaners (SÖFWJournal, 126, 11, pp. 50-56, 2000) may be used to confirm the performance requirements for acidic toilet cleaners.–IKW-test is available at: http://www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-WC-Reiniger-Englisch.pdf

The IKW test 'Recommendations for the quality assessment of bathroom cleaners', SÖFW Journal, 129 (2003) 42-48 may be used to confirm performance requirements for bathroom cleaners. IKW-test is available at: http://www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-Badreiniger-englisch.pdf

The IKW test 'Recommendation for the Quality Assessment of the Product Performance of All Purpose Cleaners', SÖFW Journal, 130 (2005) 54-66. may be used to confirm performance requirements for all purpose cleaners. IKW-test is available at: http://www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-Allzweck-englisch.pdf

2. User tests

The aim of the consumer test is to show whether the test product cleans as good as or better than a comparative reference product. User test is recommended for products intended for industrial and institutional use

General framework requirements

• For testing of professional products, responses must be received from at least five professional users, randomly selected in the sales region and normally using the reference product.
• The test product and the reference product should be of the same product category.
• The dosages used must be the dose recommended by the manufacturer.
• The test must be performed on the type(s) of surface relevant in relation to the recommendations on the label.
• The test period must allow for at least five uses of the test product.

Testing requirements

• Effectiveness of the product under test must be assessed on the ability of the product to remove soil and leave a clean surface.
• The test centers or the person conducting the testing must reply to the question 'How effective do you consider the test product to be compared to the product you normally use?'— or equivalent. At least three possibilities for a response must be available, e.g. 'poorer', 'as good as' and 'better'.
• At least 80 % of the test persons/test centers must assess the product to be 'as good as' or 'better' than the reference product.

Documentation requirements

A detailed test report must be submitted to the competent body, including information/documentation on:
• The selection of the test persons.
• The information provided by the test persons and a summary describing how the testing was performed.
• The type of surface(s) the product was tested on.
• Calculation and documentation showing that at least 80 % of the test persons/centers assess the product to be as good as or better than the reference product.
• For each test person/center, the following information must be available, e.g. in the form of answers to a questionnaire:
  - o The dosage used by the test person/center
  - o The name of the reference product
  - o A statement declaring that the product has been tested at least five times
  - o The result of the comparison of the test product and the reference product.

7.5.7 Criterion 7: User information

The detergent shall be accompanied by instructions for proper use so as to maximise product performance and minimise waste and use of resources. These instructions shall be legible or include graphical representation or icons and include information on (if appropriate):

(a) dosing instructions

The applicant shall take suitable steps to help consumers respect the recommended dosage, making available the dosing instructions and if possible a convenient dosage system (e.g. caps). Dosing instruction shall include information on the recommended dosage in g or ml and a second or alternative metric may be given in brackets (e.g. capsules, squirts, or other if the packaging has a dosage system). Recommended dosage for

a standard load for at least two levels of soiling shall be included. Information on the impact of water hardness on dosing and indications of the most prevalent water hardness in the area where the product is intended to be marketed or where this information can be found shall be provided.

(b) resource saving measures

An indication on the primary packaging shall encourage users to use cold tap water, unless it is the recommendation of the manufacturer to use water at a specified warmer temperature to dilute undiluted products for use.

(c) packaging disposal information

The primary packaging shall include information on the reuse, recycling and/or correct disposal of packaging.

(d) environmental information

The following text should appear on the primary packaging: *"All detergents have an effect on the environment. For maximum effectiveness always use the correct dose and, the lowest recommended temperature. This will minimize both energy and water consumption and reduce water pollution"*.

Assessment and verification:
The applicant shall provide a declaration of compliance together wirh a sample of the product packaging, including the label.

(e) safety advice

The following safety advice (or equivalent) shall appear on the product in text or as pictogram: '*Keep away from children'*, '*Do not mix different cleaners'*, and '*Avoid inhaling sprayed product' (only for products that are packaged as sprays).*

Assessment and verification:
The applicant shall provide a sample of the product packaging, including the label.

7.5.8 Criterion 8: Information appearing on the EU Ecolabel

The logo should be visible and legible. The EU Ecolabel registration/licence number must appear on the product and it must be legible and clearly visible. Optional label with text box shall contain the following text:

— Harm to aquatic life is limited
— Amount of hazardous substances is restricted
— Tested for wash performance

Assessment and verification:

The applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a signed declaration of compliance.

8 TECHNICAL ANNEX

8.1 General introduction to the Technical Annex

The technical annex includes the rationale behind each of the EU Ecolabel criteria proposed in the previous sections. The technical annex is organized in two types of subsections:

- the criteria structure where the efforts made for the harmonization of EU Ecolabel criteria and their wording in explained in detail and
- the technical discussions where each topic is discussed in-depth. The discussions devoted to topics that either have impacts on all products groups as well as topics that only affect one product group. References are given along the report.

Each technical discussion consists of the following parts:
- a common template for each criterion wording: this wording is the outcome of the analysis of the stakeholder's feedback received along the revision process, harmonisation efforts and the further research carried out by the authors.
- the stakeholder feedback tables: after the criteria wording, each section includes a table presenting stakeholder feedback on the 1st Technical Reports along with an assessment from the research team.
- further research: whenever needed, the technical discussion subsection is completed by a summary of the stakeholder comments and the additional research carried out from the 1st AHWG meeting until now.

8.2 Criteria structure

The structure of the current EU Ecolabel criteria for the detergents product groups is schematically presented in Table 11 below. Criteria that cover similar issues are highlighted in identical colours, including where two or more existing criteria will be merged into a single one (i.e. fragrances will now always be included under the general criterion related to restricted substances). Table 12 shows more clearly that most criteria areas are covered in all the criteria sets. One of the goals of the simultaneous revision of all the criteria sets is their harmonisation – the proposal for the criteria structure can be found in Table 13.

Table 11. Current structure of the current EU Ecolabel criteria for the detergents product groups

Criterion	LD	IILD	DD	IIDD	APC	HDD
1	Dosage requirement	Dosage information*	Total chemicals	CDV	CDV	CDV
2	CDV	CDV	Restricted substances	Biodegradability	Biodegradability	Biodegradability
3	Biodegradability	Biodegradability	CDV	Restricted substances	Restricted substances	Restricted substances
4	Restricted substances	Restricted substances	Biodegradability	Packaging	Fragrances	Fragrances
5	Packaging	Packaging	Washing performance	Washing performance	VOC	Corrosive properties
6	Washing performance	Washing performance	Packaging	Automatic dosing system	Phosphorus	Packaging
7	Points	Automatic dosing system	Consumer information	Consumer information/information on EU Ecolabel	Packaging	Washing performance
8	Consumer information	Consumer information/ information on EU Ecolabel	Information on EU Ecolabel		Washing performance	Consumer information
9	Information on EU Ecolabel				Consumer information	Information on EU Ecolabel
10					Information on EU Ecolabel	
11					Professional training	

* the criterion does not set a maximum dosage limit but is rather similar to the "reference dosage" found in most of other criteria (in the "assessment and verification" section).

Table 12. Criteria areas covered by the current EU Ecolabel criteria for the detergents product groups

Criteria Area	LD	IILD	DD	IIDD	APC	HDD
Dosage requirement	X	X*	X			
Toxicity to aquatic organisms	X	X	X	X	X	X
Biodegradability	X	X	X	X	X	X
Restricted substances	X	X	X	X	X	X
Packaging	X	X	X	X	X	X
Fitness for use	X	X	X	X	X	X
Consumer information	X	X	X	X	X	X
Information on EU Ecolabel	X	X	X	X	X	X
Automatic dosing system		X		X		
Other	X (Points)				X (VOCs, Professional training)	X (Corrosive properties)

* the criterion does not set a maximum dosage limit but is rather similar to the "reference dosage" found in most of other criteria (in the "assessment and verification" section).

Table 13. Proposed structure of the revised EU Ecolabel criteria for the detergents product groups

Criterion	LD	IILD	DD	IIDD	APC	HDD
1	Dosage requirement	CDV	Dosage requirement	CDV	CDV	CDV
2	CDV	Biodegradability	CDV	Biodegradability	Biodegradability	Biodegradability
3	Biodegradability	Sustainable sourcing of palm oil, etc.	Biodegradability	Sustainable sourcing of palm oil, etc.	Sustainable sourcing of palm oil, etc.	Sustainable sourcing of palm oil, etc.
	Sustainable sourcing of palm oil, etc.	Restricted substances	Sustainable sourcing of palm oil, etc.	Restricted substances	Restricted substances	Restricted substances
4	Restricted substances	Packaging	Restricted substances	Packaging	Packaging	Corrosive properties
5	Packaging	Fitness for use	Packaging	Fitness for use	Fitness for use	Packaging
6	Fitness for use	Automatic dosing systems	Fitness for use	Automatic dosing systems	User information	Fitness for use
7	User information	User information	User information	User information	Information on EU Ecolabel	User information
8	Information on EU Ecolabel	Information on EU Ecolabel	Information on EU Ecolabel	Information on EU Ecolabel		Information on EU Ecolabel

8.3 Article 1 - Names, scopes and definitions

8.3.1 Feedback from stakeholders following 1st AHWG meeting

The stakeholder feedback on this section is mainly divided by product group.

Table 14: Stakeholder comments regarding the names, scopes and definitions of the different product groups

Product Group	Comment area	Stakeholder comments	IPTS analysis and further research
LD	Name, scope	We support the change of name but it should be declared and defined in the document that also professional products that are not institutional but used professionally in machines like consumer machines, in schools and so on, can still be ecolabelled according to this criterion.	**Comments accepted.** The product group name is proposed to be reverted back to 'Laundry Detergents' for simplicity and an explanation is proposed to be added to the User Manual for the case of products that are aimed at professional who use washing machines that are similar to those used in the domestic setting. See Section 8.3.1.
		"Consumer" is too restrictive as this type of product can be used by a professional public in small laundrettes for example.	
		We disagree with the proposed name of the scope (Consumer laundry detergents) since the product group also covers products marketed to professional users who use domestic machines (like in a beauty salon or a kindergarten). We propose "Laundry detergents for domestic washing machines" since in this way they cover products marketed to consumers and professionals.	
		For the last sentence we prefer the wording "laundry detergent products for domestic washing machines", which is in line with our scope proposal for the current laundry products.	
		We support the proposal to use the kind of machines in the definitions of LD and DD and not "household" as small firms or tourist accommodations use machines similar to or the same as normal households.	
		"Consumer" is too restrictive as this type of product can be used by a professional public in small laundrettes for example.	

IILD	Name	With regards to the proposed name, we would like to make the following suggestion: Industrial and institutional laundry detergents ➔ Professional laundry detergents (Although the terminology "industrial and institutional" is well known to industry, the public in general is not so familiar. At A.I.S.E. we are also in the process of changing from "Industrial & Institutional Sector" to "Professional Cleaning and Hygiene Sector".)	**Comment rejected.** In order to be consistent with the description in the Detergents Regulation, the name of the product group is proposed to be kept as Industrial and Institutional Laundry Detergents as the manufacturers and users this type of highly specialised products should be familiar with the name. See Section 8.3.1.
IILD	Scope	We propose to delete this type of product [stain removers]. (It is difficult to calculate CDV for a stain remover because they are often just put directly on the stain, without any dosage instruction.)	**Comment acknowledged.** This comment was left on the IILD section of TR1 but the content of the comment seems to refer to the stain removers in LD. Indeed, in the scope of I&I laundry washing, it would be impractical to use stain removers before the washing due to the large number of pieces to launder. For domestic washing, the issue of pre-treatment stain removers was raised during the previous revision to the criteria set, along with the addition of fabric softeners and in-wash stain removers. Fabric softeners and in-wash stains removers, it was argued by some Member States, create unnecessary chemical loads. For pre-treatment stain removers, a number of products was assessed and an average dosage was concluded based on the dosage recommended by the manufacturer [6]. While it is true that the user is at liberty to choose to exceed that recommended dosage, currently no data has been brought forward disputing this average dosage.
DD	Definition and scope	We think that the differentiation according to the machine type is not correct. This product group is not only for consumers. Our only license covers products intended for professional users who use a domestic dishwasher or a professional dishwasher which is similar to a domestic dishwasher. These products should still be part of the scope. The next sentence, we think that it could be defined better "automatic consumer dishwasher and in automatic dish washer for professional use", because the size and usage of them is similar in private use.	**Comments accepted.** As for LD, it is proposed to indicate in the User Manual that products aimed at professionals but that are designed for machines that are similar to those used within the domestic sphere still fall under the product group "Dishwasher Detergents". Also similarly to LD, the word "consumer" is no longer proposed as part of the name of the product group. While it is true that the cycle length can be used to differentiate between household and I&I machines (for example, I&I machines could be considered those with cycles of under 30 minutes) as is done in other ecolabelling scheme, currently it is proposed to stay with the differentiation of machine type based usage for household and I&I machines, as it is done in the Detergents Regulation.
IIDD	Name, definition and scope	We propose that it is amended as follows *"... are designed for use in professional dishwashers outside the domestic sphere carried out by specialized personnel using specific products*".	**Comments rejected.**

		With regards to the proposed name, we would like to make the following suggestion: Industrial and institutional dishwasher detergents ® Professional dishwasher detergents.	Similarly to IILD and in order to be consistent with the description in the Detergents Regulation, the name of the product group is proposed to be kept as Industrial and Institutional Dishwasher Detergents as the manufacturers and users this type of highly specialised products should be familiar with the name. See Section 8.3.1.
APC	Name, definition and scope	Proposal "hard surface cleaning products" seems to be interesting and clearer than "cleaning products" which is very general. The JRC proposes to change the name of this product group from "All purpose cleaners and sanitary cleaners" to "Cleaning Products", which would comprise all-purpose cleaners, window cleaners and sanitary cleaners. As some product groups will neither fit into "all purpose cleaners" nor into "sanitary cleaners", we think that changing the category's name to "Cleaning Products" is adequate. Change to Hard Surface Cleaning Products	**Comments accepted.** While the proposal to change the name of the product group to "Cleaning Products" obtained general support, the stakeholder proposal to add clarification by adopting the name "Hard Surface Cleaning Products" is on point. This latter name will be taken to the 2nd AHWG. See Section 8.3.1.
		We are of the opinion that renaming the product group into the term "Cleaning products" as this is too general. The terms "routine" or "routine cleaning" shall be included as we don't award a variety of special products which are used only seldom or in case of special soiling. To distinguish it from the other product groups which are used in machines the term "Cleaning agent" might be more suitable but this is a question to native speakers. If "cleaning agent" doesn't include hand dishwashing detergents, fine. If not, the term "hard surfaces" might be needed as well. Another term needed could be "manual".	**Comment partially accepted.** As stated above, the name of the product group will be proposed to be changed to "Hard Surface Cleaning Products" as to be more specific as to which types of products are covered. In order to limit the length of the name of the product group, "routine" is not proposed to be included but the term is proposed to be more explicitly defined in the scope (in alignment with the EU Ecolabel for Cleaning Services). Nevertheless, the term routine will remain in the definition of the product group. See Section 8.3.1.
APC	Definition	We think that "Kitchen cleaners" should be included under "all-purpose cleaners" and not under "Sanitary cleaners". We ask that kitchen cleaners shall be comprised in the group of all purpose cleaners as they are much more similar to them than to sanitary cleaners.	**Comments accepted.** The new scope proposal includes "kitchen cleaners" under the all-purpose cleaners section in order to reflect that their formulations are close. See Section 8.3.1.
ALL	Scope	If the product no longer has to be a mix of ingredients, what would the implications be? Which products for hand dishwashing would fall into the scope due to this change?	**Comments accepted.** As no preparatory studies for the EU Ecolabel have been done on

		We are not sure that single ingredient products like vinegar should be part of the scope. Which other products next to spirit vinegar could be included if the product no longer has to be a mixture? Can the EU Ecolabel criteria distinguish these products as part of the top 10-20% on the market? In Belgium, cleaning vinegar is not commonly found. People use normal spirit vinegar for cleaning (not sold as a cleaning product). Would a spirit vinegar with for example a perfume added that corresponds to the EU Ecolabel criteria be better than the normal spirit vinegar that is used today? Will there be an environmental benefit by ecolabeling them? We would only want to expand the scope if a real environmental gain can be achieved.	formulations that only include a single substance and the criteria set does not allow to differentiate between two chemically identical substances that were obtained through different manufacturing means, it is proposed to keep single substance products outside the scope. To the best knowledge of the JRC-IPTS, no single substances hand dishwashing detergents exist on the market. For household cleaning, single substance products such as rubbing alcohol might be used. See Section 8.3.1.
APC	Scope	I don't understand because the cleaning product group is only used for indoor, we think that the windows cleaning and degrease are used in a garden furniture, windows outdoor, etc.	**Comment rejected.** Further rationale has been added to the TR explaining that currently only the impacts of indoor cleaning have been studied (LCA, etc.) and possibly products that are used outdoors would have other impacts (e.g. higher VOCs) See Section 8.3.1.
APC	Concentration	(in response to: "Should undiluted sanitary cleaners and windows cleaners be included in this product category?") Yes, we think that undiluted product or concentrated products are better for environment than ready to use.	**Comment acknowledged.**
APC	Scope	BEUC and EEB support the exclusion of wipes as proposed by the JRC. These products are unsustainable per se as they are only used once and therefore produce a considerable amount of avoidable waste. Therefore they should not be able to obtain the Ecolabel. We would like a clear exclusion from the scope of toilet and urinal blocks since they don't clean the toilet or urinal effectively.	**Comments accepted.** Along with wipes, toilet and urinal blocks are proposed to be listed in the product group definition as these types of products have been discussed at the CB Forum and have been agreed to be excluded. See Section 8.3.1.
APC	Scope	We support and highly ask that undiluted products, in particular undiluted hand dishwashing detergents, sanitary cleaners and glass cleaners shall be included. This is especially important for professional products, sold most of the times undiluted which is environmentally preferable. They are often diluted by automatic dosing systems which are preferable as well as dosage is done in	**Comment accepted.** Undiluted window cleaners and sanitary cleaners are proposed to be explicitly covered in the product group. See Section 8.3.1.

		a much more exact way than if it is done manually.	
LD / DD / APC	Product type (scope?)	Severe health risks can occur when children or babies (or animals) get access to laundry capsules. Mandatory measures have been voted in October 2014 and will come into force in 2015 but it hasn't been proven yet that these measures will really decrease the number of accidents. The EU Ecolabel should take additional measures to reduce the number of accidents even further or we could ban this type of product based on the precautionary principle until it becomes clear that the measures that have been taken have proven to be effective (retrospective study will be done by the Commission to verify is the measures that will soon come into force are effective or not). Alternatives like liquids sold in bottles or tablets are common on the market and don't have so many accidents. Or as a minimum we could set a stricter criterion on the film by doubling the requirements for the film so it will only dissolve in water after 60 seconds. We don't see an environmental benefit of these products, they have a lot of packaging (soon they can no longer be sold in bags due to safety reasons and will always have to be sold in boxes) and they cannot be dosed very precisely because the dosage is 1 capsule (only very dirty, hard water you need to add 2). You cannot adjust the dosage if you have a large washing machine or a small one, since the recommendations are made for a standard load of 4,5kg. This criterion is not only applicable to laundry detergents, also dishwashing detergents can be found in capsules. Even others like APC are coming on the market.	**Comment rejected.** While the safety of consumers is very important, health and safety issues are not the primary concern of the EU Ecolabel scheme and thus the scope is not proposed to be limited to products that are not sold in capsules as these are becoming more and more present on many markets (see [7]). While it is true that the dosage cannot be easily adjusted, many consumers prefer these types of products as they cannot overdose easily as with products that must be poured or scooped. In terms of environmental impacts, soluble films are considered as being part of the formulation and must respect the same environmental criteria as the product itself.

Table 15: Stakeholder comments regarding the inclusion of fabric softeners in the scope of the laundry detergents product group.

Opinion	Stakeholder feedback	IPTS analysis and further research
For the *inclusion* of fabric softeners	In our opinion, they should be included.	There remain arguments for and against the inclusion of fabric softeners in the laundry detergents product group and it is largely a policy decision. Research results on the compostion of fabric softeners is presented in Section8.3.3.
	We think softeners should be included in the scope of the EU Ecolabel for multiple reasons: The European regulation 648/2004 considers them as part of the product group defined as detergents, from art 2: "Laundry fabric-softener, intended to modify the feel of fabrics in processes which are to complement the washing of fabrics." Our knowledge brings us to consider them good for human health. This is because softeners bring fabrics back to dermal neutrality, where detergents usually work in an alkaline environment. For marketing reasons: producers coming in contact with us are asking for a "full line of products" to propose to the public with the label. This line is evidently counting softeners also. For research and development reasons: we think it is the one of the Ecolabel's duties to give the opportunity to consider new technologies in order to develop new products. To exclude one category would mean not encouraging the market in this sense. Leaving, moreover, consumers without the opportunity to choose an ecologic option, or to seek for another option on the market.	
	Despite the position of some competent bodies, customers are demanding for such products. This will enable companies to propose a full Ecolabel solution to their clients. Surfactants included in softeners are aerobically biodegradable.	
	Ajout des assouplissant dans les produits candidats à l'ecolabel necessaire.	
For the *exclusion* of fabric softeners	We are of the opinion that fabric softeners shall not be included in the EU Ecolabel as these products are unnecessary! In article 2 of the REGULATION (EC) No 648/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 March 2004 on detergents these products are defined in the following way: Other products to be considered as detergents are: — 'Laundry fabric-softener', intended to modify the feel of fabrics in processes which are to complement the washing of fabrics. In our view these products should be avoided as they are unnecessary. Their use may result in an additional burden of the environment and maybe also consumers with highly doubtful benefits, even though the main chemicals used ("esterquats") have got good environmental profiles (see above). An EU Ecolabel on the package of these products will be recognized as a purchasing recommendation which we cannot support. As an additional comment: Formulations of fabric-softeners are very similar. The surfactants used for the modification of the feel of fabrics are cationic surfactants, nowadays nearly exclusively "esterquats". According to the report from the HERA project, "Most, if not all, fabric conditioners marketed in Europe are now comprised of the three Esterquat groups, TEAQ (triethanol amine quat), DEEDMAC (diethyloxyester dimethylammonium chloride), and HEQ ((Z)-2-hydroxy-3-[(1-oxo-9-octadecenyl)oxy]propyltrimethylammonium chloride). They combine a good environmental profile, especially in terms of ready and ultimate biodegradability (OECD criteria), with the structural features required for an	

	effective fabric conditioner." http://www.heraproject.com/files/17-e-01-03-2008%20%20hera%20eq%20environment%20final%20draft.pdf. Additional common components in fabric softeners are fragrances and preservatives. EU Ecolabel criteria would therefore probably end up in criteria for these additives (each below 1% of the formulation!) and the awarded products would only differ in these and maybe packaging. Maybe also the raw material base of esterquats could be an issue: http://portal.mpob.gov.my/aotd/rnd-fabric.htm.	
	Fabric softeners should be excluded	
	On this question, BEUC and EEB hold – as in the past – the view that fabric softeners should be excluded from the EU Ecolabel scope. We would like to stress that the purpose of softeners is not to clean; as they do not have any cleaning properties they have no function to improve the washing process. On the other hand fabric softeners have a high environmental impact and Critical Dilution Values (CDV) which means they are toxic to aquatic organisms and they are poorly biodegradable. Besides the negative environmental impact of laundry softeners, their use also leads to consumers being exposed to fragrances which are not rinsed off from the textiles and which can cause strong allergies due to contact with the skin. Although laundry detergents might have high market penetration, the potential of a meaningful differentiation regarding the environmental impact of different softeners is low: most products are very similar in their composition.	

8.3.2 Horizontal issues: names, scopes and definitions

Product group name: Detergent products for household applications

The current EU Ecolabel criteria for detergent products aimed at the general public have the generic names "Laundry Detergents" and "Detergent for Dishwashers". The Detergents Regulation [3] contains definitions for similar product groups with the titles, "Consumer laundry detergents" and "Consumer dishwasher detergents". In order to align the EU Ecolabel product groups and definitions with those found in the Detergents Regulation, it was proposed to add "consumer" to the product group names.

During consultation with stakeholders, it was pointed out that this might lead to confusion as currently multiple products aimed at small businesses equipped with household or semi-professional (household-like) washing machines or dishwashers are awarded the EU Ecolabel for Laundry Detergents/Detergents for Dishwashers. These products are used in a professional setting (e.g. small school, hair dresser, laundrette) and are not aimed at general "consumers" but they differ greatly from I&I products (see below).

The names could be expanded to "Laundry/dishwasher detergents for domestic washing/dishwashing machines" but it is generally agreed that product group names should be as concise as possible while still conveying the intent of the product groups.

Product group name: Detergent products for I&I applications

The names of the I&I product groups are in alignment with the definition found in the Detergents Regulation and the terms "Industrial and Institutional" are known to professionals in the sectors concerned. Although it was suggested during stakeholder consultation that the terms might be unfamiliar to the general public and that the major trade body was shifting to using the term "Professional", it is proposed to keep the current product group names, especially considering the remarks made by competent bodies on the fact that products aimed at small business that use household machines are often referred to as "professional" in order to differentiate them from the "consumer" products aimed to be used in the same types of machines.

Following stakeholder feedback during consultation (Section 2.3 of Preliminary Report), it is proposed to include several minor changes to the definition of the product. First, the wording of the areas of applicability of the detergents is proposed to be modified in order to bring further harmonisation between this EU Ecolabel, the other EU Ecolabels covering I&I product groups and the Detergents Regulation. Second, the addition of a clarification of what constitutes of multi-component system is proposed through the inclusion of examples. Small grammatical editions are also proposed.

Differences between domestic/household products and I&I products

The current EU Ecolabels for detergents mostly make a difference between domestic/household products and I&I products based on the intended use of the products and/or the users, even if there appear to be no absolute criteria to differentiate them. The difference is made between products that are intended to be used in household machines and products for machines that must be used by specialised personnel. This is in alignment with the differentiation made in the Detergents Regulation but differs from what can be found in other ecolabelling schemes (e.g. Nordic Swan), where the differentiation is made based on the length of the washing cycle.

Neither system is perfect as there might be some overlaps with products that can be used in all types of machines and semi-professional machines that propose cycle times that do not clearly fall in either category. For the sake of simplicity and to align with the Detergents Regulation, the EU Ecolabel is proposed to continue differentiating between the two types of products based on the machines used – those that are domestic or domestic-like and those that are meant to be used in an industrial and institutional setting by specialised personnel.

The revisions of the Ecodesign Directives for washing machines and dishwashers define the type of machine in accordance with the requirements set in two different directives (see definitions for dishwashers)

> - 'Household dishwasher' (definition under revision) means a machine which cleans, rinses and dries dishware, glassware, cutlery and cooking utensils by chemical, mechanical, thermal, and electric means; which may or may not have a specific drying operation at the end of the programme; which is designed in a way principally intended for domestic use as stated by the manufacturer in the Declaration of Conformity (DoC).

- ‘Professional dishwasher’ means a machine which cleans, rinses, and dries wash ware like dishware, glassware, cutlery, and other utensils connected to the preparation, cooking, arrangement or serving of food (including drinks) by chemical, mechanical, and thermal means; which is connected to electric mains and which is designed to be used principally for commercial and industrial purposes as stated by the manufacturer in the Declaration of Conformity (DoC).

The delimitation between professional dishwashers and household dishwashers is defined through the Machinery Directive [8] which explicitly excludes dishwashers intended for household use and which defines essential health and safety requirements for dishwashers which are intended for professional use. According to the Machinery Directive, manufacturers have to determine the ‘intended use’ (domestic or commercial / industrial use) and state this in the product information or the so called Declaration of Conformity. Those machines that are intended for a household use fall under the coverage of the Low Voltage Directive [9].

8.3.3 Laundry detergents: name, scope and definition

Scope and definition: The scope and definition of the product group is proposed to be streamlined through the removal of the indication that liquids, powders and other types of products are included as it is considered to be self-evident. It is also proposed to include that products aimed at "domestic-like" machines are named in order to clearly differentiate between the types of products covered by this product group and those covered by the I&I product group.

Stakeholders were asked for feedback on the inclusion of fabric softeners in the scope of the EU Ecolabel for Laundry Detergents and opinions for and against were voiced. Among the main arguments for their inclusion was the fact that fabric softeners are covered by the Detergents Regulation and that they are extensively used in some countries, so consumers should have the ability to buy more environmentally friendly products. Proponents of not including them in the scope highlighted that they do not have a washing function and the formulations available on the market are very similar making differentiating between them difficult.

This final point is crucial as if fabric softeners were to be included, the EU Ecolabel would have to be able to identify the environmentally ‘good’ formulations from the 'bad' ones. Little data could be identified on existing formulations of fabric softeners but it can be noted that in 2008 the HERA Project [10] noted that, "Most, if not all, fabric conditioners marketed in Europe are now comprised of the three Esterquat groups, TEAQ (triethanol amine quat), DEEDMAC (diethyloxyester dimethylammonium chloride), and HEQ ((Z)-2-hydroxy-3-[(1-oxo-9-octadecenyl)oxy]propyltrimethylammonium chloride)." The fact that triethanoal amine (TEA) is a major ingredient of most fabric softeners in Europe was claimed by Friedli *et al.* [11]. Murphy [12] also stated that "there does not seem to be anything on the horizon which will replace ester quats as the main active ingredient in domestic fabric softener products". The same study notes that research is being conducted in order to reduce the amount of solvents used at the production stage (solvents not part of the final formulation) and increase the amount of time a fragrance remains on laundrered clothes. For ester quats, the 2014 DID list contains two entries.

This information highlights that, most likely, the formulations of domestic fabric softerners are currently very similar and fragrances could play a major role differentitating between products as well as environmental aspects linked to the production of substances, which is not easily covered by the EU Ecolabel. As such, the criteria developed for laundry detergents would not be able to differentiate between the "good" and "bad" fabric softeners in any meaningful way besides by lowering the quantities of additives.

8.3.4 Industrial and Institutional Laundry Detergents: name, scope and definition

Scope and definition: Market analysis showed that the current criteria covers all products on the market (Section 3 of the Preliminary Report) and stakeholder consultation and the review of other ecolabels and voluntary agreements for industrial and institutional laundry detergents have not raised further issues on the scope (Sections 2.3 and 2.5 of the Preliminary Report). Following stakeholder requests, a clarification of what constitutes of multi-component system is proposed through the inclusion of examples.

8.3.5 Dishwasher detergents: name, scope and definition

Name of product group: the name of this product group is proposed to be changed from "Detergents for Dishwashers" to "Dishwasher Detergents" in order to harmonise the product group names covered by EU Ecolabels.

Scope of product group: The scope and definition of the product group is proposed to be streamlined through the removal of the indication that liquids, powders and other types of products are included as it is considered to be self-evident.

Moreover, during consultation, a stakeholder stated that differentiation based on machine type was insufficient as even if consumer-type machines were used by 'professionals', the consumer detergents could be inadequate to produce clean products. A possibility is that the group could be defined as the complement of the I&I group (but also excluding specialist healthcare and food sector applications), perhaps based on the characteristics of the dishwasher machines (e.g. household dishwashers should comply with the requirements set in Low Voltage Directive [9] while semi-professional and professional dishwashers should comply with the requirements set in the Machinery Directive [8]). The differentiation based on the cycle times greater than, say, 20 minutes, which is the limit set in Nordic Swan for professional product cycles is not appropriate as household equipment can run quick programs that last for 15 or 30 minutes, depending on the manufacturer.

However, overall, there seems little confusion about what the scope of consumer detergents is as applied to private washing duties and conventional household machinery. Thus, it is not proposed to provide further explanations of the scope in the criteria text.

8.3.6 Industrial and institutional dishwashers: name, scope and definition

Scope and definition: concerning the differentiation between I&I and household products, it was suggested during stakeholder consultation to use cycle duration to differentiate between the two, for example Nordic Swan consider all machines with a cycle under 20 minutes to be professional (I&I) machines. Such a limitation is, however, uncertain as household appliances include quick programs that are able to run for extreme short periods of time.

Due to this fact, it is proposed to keep the scope based on the type of dishwasher that generally uses industrial and institutional dishwasher detergents, namely semi-professional and professional dishwashers. Both types of dishwashers should fulfil the requirements of the Machinery Directive [8].

8.3.7 Hand dishwashing detergents: name, scope and definition

Overall, the name, scope and definition of the product group are proposed to remain largely unchanged as the market analysis [13] showed that all relevant products are covered and stakeholder consultation and review of other ecolabels and voluntary agreements did not raise any issues. A slight alteration is proposed in order to facilitate comprehension of what is in the scope as the phrase "and so on" added vagueness to the definition.

The restriction on the intentional addition of micro-organisms is kept in this proposal based on the information reported in Section 8.12.11. Currently, no hand dishwashing products containing micro-organisms could be found on the market and the health hazards associated with potentially contaminating food with the micro-organisms in the products have not been studied in depth. Thus, due to safety concerns,

the ban on the presence of micro-organisms is proposed to be maintained in the EU Ecolabel criteria for hand dishwashing detergents.

8.3.8 Hard-surface cleaning products: name, scope and definition

Name of product group: the name of the product group is proposed to be changed to "Hard Surface Cleaning Products" in order to reflect better the scope, as the current name fails to mention window cleaners. While "Cleaning Products" could be a shorter alternative and it is currently used for similar product groups in other ecolabelling schemes (e.g. Nordic Swan and Green Seal), it is very general, as was highlighted by multiple stakeholders. The terms "hard surface" clearly show that product such as carpet cleaners are outside the scope. Some stakeholders also proposed to include "routine" in the title as the scope is limited to routine products, but in an effort to keep the name as short as possible while still informative, the term is not proposed to be included.

Scope and definition:

- Kitchen cleaners: In the current criteria document, kitchen cleaners are treated as sanitary cleaners but stakeholders proposed to move them into the category of all-purpose cleaners as their formulations are closer to those of the latter. In support of this, research was conducted to determine the similarity and differences in the formulations of the three types of cleaners (Table 16).

Table 16. Formulation comparison for leading brand all-purpose cleaners, kitchen cleaners and sanitary cleaners

Product	Main ingoing substances
APC	Water, surfactants, water softener, anti-oxydants, fragrances
Kitchen Cleaner	Water, surfactants, fragrances
Sanitary Cleaner	Water, scale remover, surfactants, water softener, thickener, fragrances

From this research, all-purpose cleaners and kitchen cleaners primarily contain cleaning agents (surfactants) whereas sanitary cleaners focus more on scale removal and often also have thicker formulations. Thus, in the scope, kitchen cleaners are proposed to be moved into the category of all-purpose cleaners by indicating that kitchen surfaces are covered by the cleaners in the first category.

- Products for outdoor use: In the current criterion text, only all-purpose cleaners intended for indoor use are allowed to be awarded an EU Ecolabel and no indication is given for window and sanitary cleaners. It is proposed to restrict the scope to products which are mianly intended for indoor use for all the types of products covered. Indeed, the background information gathered (e.g. LCA studies) and the criteria were developed with typical indoor use in mind and products intended for outdoor use might have different formulations that, for example, include more elevated VOC levels. The product awarded with the EU Ecolabel can still be used by consumers outdoors but their primary use should be for indoor applications. Products aimed at car maintenance are proposed to be out of the scope of this product group for the same reasons – the criteria were not developed to address environmental issues that might arise from the use of cleaning products in that setting.

- Undiluted products: As more and more undiluted products appear on the market, thus limiting transport and packaging costs and associated emissions, it is proposed to extend the scope to all types of undiluted products and not just all-purpose cleaners as in the current criteria text. This extension would be mostly of interest for professional products but would also entail the addition of more thresholds to some criteria.

- Excluded products: Stakeholders proposed that certain single ingredient products should be permitted in scope. Examples quoted included spirit vinegar and rubbing alcohol. The issue was raised at EUEB meetings and it was generally agreed that the current criteria cannot make a difference between two single ingredient products that only differ by their manufacturing stage as the criteria focus on the final product formulation and not how the substances making up the product were manufactured. Further, the LCAs performed during the background research were not conducted for these types of products. Accordingly, the requirement for products to be mixtures of chemicals is not proposed to be removed from the criteria.

Two stakeholders also supported the view that wipes (which do have detergency action) should be explicitly excluded in the criteria text, and that urinal blocks (which have no detergency action) should be on this list. Wipes and other products that are not mixtures of chemicals or do not help the cleaning process are already implicitely excluded as they do not fall under the Detergents regulation. In order not to complicate the text related to the scope, it is proposed to cover these products and any other products of that nature in the User Manual.

- ***"Routine" cleaning:*** As the scope mentions that only "routine" products are included, stakeholders highlighted that an explicit definition should be provided. Moreover, the term "routine" also plays an important role in the scope of the EU Ecolabel for Cleaning Services being developed and the two should be as consistent as possible.

In the Cleaning Services EU Ecolabel, the following definition is provided: *"'routine' refers to regular activities that are performed at least once a month, with the exception of window cleaning, where 'routine' refers to regular activities that may be performed less frequently (e.g. at least once every three months)*". For the Hard Surface Cleaning Products EU Ecolabel, the term "routine" is generally understood to be the opposite of "exceptional" as in for tasks that might be unscheduled and deal with specialised soiling (e.g. blocked drains, bio/nuclear-decontamination). Thus, to combine both aspects, it is proposed that the section defining "routine cleaning" refers both to time and the types of soils expected to be removed.

8.4 Article 2 – Definitions

Common text template - DEFINITIONS
For the purpose of this Decision, the following definitions shall apply: (*) "ingoing substances" means substances intentionally added, by-products and impurities from raw materials in the final product formulation (including water-soluble foil, if applicable); (*) "heavy-duty detergents" means detergents used for ordinary washing of white textiles at any temperature; (applicable for LD) (*) "colour-safe detergents" means detergents used for ordinary washing of coloured textiles at any temperature; (applicable for LD) (*) "light-duty detergents" means detergents intended for delicate fabrics; (applicable for LD) (*) "undiluted product" means a product that is diluted in water prior to use; (applicable for APC) (*) "ready-to-use (RTU) product" means a product that should not be diluted in water before use; (applicable for APC) (*) "primary packaging" means - for single doses in a wrapper that is intended to be removed before washing, the individual dose wrapping in direct contact with the content and the packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase, including label where applicable; - for all other types of products, packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase in direct contact with the content, including label where applicable; (applicable for LD/DD) (*) "primary packaging" means packaging conceived so as to constitute the smallest sales unit of distribution to the final user or consumer at the point of purchase in direct contact with the content, including label where applicable; (applicable for IILD/IIDD/HDD/APC) (*) "microplastics" means plastic micro beads used as a scrub/abrasive material in detergent and cleaning products.

8.4.1 Feedback from stakeholders following 1st AHWG meeting

Table 17. Stakeholders comments on the 'definitions'

PGs	Comment area	Stakeholder comments	IPTS analysis and further research
LD	Terminology (definitions) – comment left on "low-duty".	We suggest to use 'light' duty instead. (It is the commonly used term by industry and also used in Detergents Regulation (Annex VII B). Moreover, in English the antonym of 'heavy' is 'light'.)	**Comment accepted.** A change in terminology to "light-duty" has been made throughout the LD criteria. See Section 2.2.
		Light duty is more correct	
		Light is more correct	
APC	Terminology	We ask to use the wording "undiluted" consequently throughout the criteria for "Cleaning Products" and not alternatively "concentrated" as this wording isn't defined in the scope and might lead to confusion. Or you have to define "concentrated" as well in the scope.	**Comment accepted.** Changes were made to the technical report in order to ensure that "undiluted" is used throughout the report and there is no confusion with "concentrated".
ALL	Scope	The term "ingredient" should be defined as well.	**Comment accepted.** The use of the term "ingredient" in the proposed decision text is a legacy word. All instances of the term have been replaced with "ingoing substances" in the updated criteria. Thus, the term is not proposed to be added to the definition list.
ALL	Terminology	When referring to 'biocides' the wording to use should be 'biocides used as preservative' or 'preservatives'.	**Comment accepted.** 'Biocides' has been replaced by 'preservatives' for simplicity and consistency with the EU Ecolabel criteria for Rinse-Off Cosmetics.

8.4.2 Horizontal issues: definitions

In the current versions of the EU Ecolabels related to detergents, the section on definitions of terms can often be found in Article 2 of the body of the EU Ecolabels but without much harmonisation. Some definitions are specific to a single product group (e.g. definition of different laundry detergent types) but other have been developed to be common to all six product groups in order simplify and clarify the reading of the EU Ecolabels, as explained below. This harmonisation does not represent major changes compared to the current EU Ecolabel criteria as most of these definitions were already present, although often in sections such as "Measurement Thresholds" (e.g. in the EU Ecolabel for Industrial and Institutional Laundry Detergents).

Ingoing substances (all product groups): The term "ingoing substances" is proposed to be used throughout the criteria documents in order to clarify what should be considered in every criterion. This is also more clearly described in the "Measurement threshold" section. No mention is made "mixtures" in the definitions as, following stakeholder feedback, the applicant and/or the applicant's suppliers should have access to formulations down to the substance. In the exceptional cases where neither the applicant nor the applicant's suppliers know the composition of a mixture down to the substances, information on the mixture itself can be provided to the Competent Bodies, as described in the "Assessment and verification" section.

Packaging: For packaging, two harmonised definitions are proposed. This differentiation is made in order to clarify what constitutes the primary packaging for products that are sold as a main container filled with individually wrapped doses, as this type of product is becoming more and more present on the laundry and dishwasher detergent markets. The criteria text for LD and DD specifies that "If the product has a water-soluble foil intended not to be removed before washing, the foil must be considered to be part of the product formulation in all relevant requirements" therefore it is considered as part of the product. Thus, only individually wrapped doses with wrapping that is intended to be removed before washing are singled out by the packaging definition. The individual wrappers should be considered for the packaging requirements as they generate domestic waste.

Preservatives: Following stakeholder feedback and in order to harmonise with the Rinse-off Cosmetics EU Ecolabel and the Biocidal Products Regulation, it is proposed to only make reference to "preservatives" throughout the criteria texts and not "biocides". Indeed, the Biocidal Products Regulation identifies numerous classes of biocides. Under Main Group 2, Product-type 6, 'Preservatives for products during storage' covers manufactured products which required control of microbial deterioration, into which class detergents fall.

Light-duty detergents (Laundry detergents): An update is proposed to the term "light-duty detergents" following feedback from stakeholders. The term more commonly used is "light-duty detergents" and can be found in the product catalogues of manufacturers.

Undiluted/Ready-to-use/Concentrated (Hard-surface cleaning products): During the early stages of the revision work, it was decided that a distinction must be made between propoducts that should be diluted before use and products that should be used in smaller quantities compared to their "traditional" counterparts because they contain a higher percentage of active substances. The first type of product is proposed to be refered to as "undiluted" and the latter as "concentrated". While the current EU Ecolabel criteria sets do not refer to "concentrated" products (but those are, to an extent, favoured by the dosage and packaging criteria), the definitions are important for discussion purposes.

Thus, the following guidelines are used in the current report:

- "concentrated" shall only refer to products that have a "concentrated" claim made by the manufacturer in the sense that less product is to be used for the same function and without dilution (i.e. a concentrated laundry detergents dose should be lower than the dose of a regular laundry detergent). Currently no criteria exist or are proposed that would differentiate between normal and concentrated products.
- "undiluted" shall only refer to products that must be diluted before their intended use (i.e. an undiluted all-purpose cleaner should only be used when the recommended dose is diluted in the amount of water prescribed by the manufacturer). The term for products that should be used without dilution is "ready to use" (RTU).

With these two definitions, it is then possible to have a concentrated undiluted product, which then designates a product for which a lower dose is necessary and that should be diluted before use.

8.5 Assessment and verification and measurement thresholds

Proposal for common text Common text template – DEFINITIONS
A) Requirements The specific assessment and verification requirements are indicated within each criterion. Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant and/or their supplier(s) as appropriate. Competent Bodies shall preferentially recognise attestations which are issued by bodies accredited according to the relevant harmonised standard for testing and calibration laboratories and verifications by bodies that are accredited according to the relevant harmonised standard for bodies certifying products, processes and services. Where appropriate, test methods other than those indicated for each criterion may be used if the Competent Body assessing the application accepts their equivalence. Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications. As pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement. The Appendix I makes reference to the "Detergent Ingredient Database" list (DID list) which contains the most widely used ingoing substances in detergents and cosmetics formulations. It shall be used for deriving the data for the calculations of the Critical Dilution Volume (CDV) and for the assessment of the biodegradability of the ingoing substances. For substances not present on the DID list, guidance is given on how to calculate or extrapolate the relevant data. The latest version of the DID list is available from the EU Ecolabel website or via the websites of the individual competent bodies. The following information shall be provided to the competent body: (i) The list of all ingoing substances indicating trade name, chemical name, CAS no., DID no., the ingoing quantity, the function and the form present in the final product formulation (including foil) at or above the following concentrations: - preservatives, fragrances and colouring agents - regardless of concentration, - other ingoing substances - 0,010% by weight; For each ingoing substance listed, the safety data sheet in accordance with Regulation (EC) No 1907/2006 of the European Parliament and of the Council shall be provided. (ii) If a supplier prefers not to disclose the ingoing substances included in a mixture to the applicant, the information can be sent directly to the Competent Body by the supplier; (iii) In exceptional cases, if the ingoing substances included in a mixture are unknown, the applicant can supply the information requested in (i) for the mixture.

B) Measurement thresholds

Compliance with the ecological criteria is required for all ingoing substances as specified in Table 18.

Table 18. Threshold levels applicable to ingoing substances by criterion for xxxx Detergents

Criterion name		surfactants	preservatives	colouring agents	fragrances	other
Toxicity to aquatic organisms		≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Biodegradability	Surfactants	≥ 0,010	x	x	x	x
	Organics	≥ 0,010	no limit*	no limit*	no limit*	≥ 0,010
Sustainable sourcing of palm oil		≥ 0,010	x	x	x	x
Excluded or limited substances and mixtures	Specified excluded and limited subst.	no limit*	no limit*	no limit*	no limit*	no limit*
	Hazardous subst.	≥0,010	≥0,010	≥0,010	≥0,010	≥0,010
	SVHCs	no limit*	no limit*	no limit*	no limit*	no limit*
	Fragrances	x	x	x	no limit*	x
	Preserva-tives	x	no limit*	x	x	x
	Colourants	x	x	no limit*	x	x
	Enzymes	x	x	x	x	≥ 0,010

* "no limit" means: regardless of the concentration, all substances intentionally added, by-products and impurities from raw materials (analytical limit of detection)

8.5.1 Feedback from stakeholders following 1st AHWG meeting

Table 19. Stakeholder comments regarding assessment and verification and measurement thresholds

PGs	Comment area	Stakeholder comments	IPTS analysis and further research
ALL	mixtures	Are substances composing in-going mixtures regarded as in-going substances? This point shall be clarified in the text.	**Comments accepted.** For all six product groups and all criteria, it has been clarified what are ingoing substances and no mention is made of mixtures, except when explaining that mixtures can be considered in exceptional cases.
ALL	In-going substances	(in response to the following text: "ingoing substances") all ingoing substances intentionally added	
ALL	Exclusions/ mixtures	Ambiguous. The text shall clearly explain whether in-going mixtures should be considered as a whole or whether the criterion assessment should be based on substances only (i.e. in-going substances plus substances composing in-going mixtures).	
TA	Exclusions/ mixtures	Introducing the term of "mixtures" in the revised form of (II)LD, (II)DD, APC and HDD EU Ecolabels is highly debatable. First, because it introduces ambiguity in the assessment of ecolabel criteria (if a mixture is present in the final formulation, should the assessment be based on data available on the mixture itself or on data available on the substances composing the mixture?). Second, because several concepts dealt with in EU Ecolabels are not relevant for mixtures (e.g. degradability, adsorption/desorption, bioaccumulation).	
TA		We think that the word mixtures should not be used. For the definition of 'substance' (and 'mixture', when relevant) a reference to the existing agreed definition in the REACH Regulation should be made.	
LD	Exclusions/ mixtures	The wording is not clear, please re-phrase. Does the 0,010% limit address both "substances and mixtures intentionally added" and "by-products and impurities" or only "by-products and impurities"?	**Comments accepted.** The criteria text has been clarified but it is also proposed to add a table, such as the one found in Table 18 below, illustrating the thresholds in the User Manual.
DD	Exclusions/ mixtures	Please clarify the meaning, see comment under laundry detergents document	
IIDD	Exclusions/ mixtures	Please clarify what 0,010% addresses	
APC	Exclusions/ mixtures	Please clarify this meaning	

ALL	Exclusions/ mixtures	Ambiguous phrasing. According to the title of criterion X(a) ("Specified excluded ingoing substances and mixtures"), my interpretation is that compounds specified under this title can be present in the final formulation as long as their concentration does not exceed 0.01% w/w (cf. definition of ingoing substances). According to selected text ("The product shall not be formulated or manufactured using any of the following compounds"), my interpretation is that specified compounds cannot be present in the final formulation, regardless of their concentration. Which interpretation is correct?	
ALL	Exclusions /mixtures	Hazard statements reported in Table 2 are applicable to both substances and mixtures. Why writing "generally refer to substances"?	**Comment accepted.** This portion of the text was used to state that information for substances should be primarily provided. This is now stated in the general "assessment and verification" and the criteria text no longer refers to "and mixtures".
HDD	Exclusions/ mixtures	Part B) The criterion is applicable to any ingoing substance at a concentration greater than 0,010% What if 2 ingredients both classified R50 and with the same function are used in a concentration of for example 0,009; in total 0,018 would be present in the final product but this would be allowed because it are 2 different ingredients. When only one of them is used a concentration of 0,011%, this would not be allowed. This could be resolved when the total amount of all classified substances cannot be greater than 0,010 for each H-phrase. In the old soaps and shampoos criteria they had to make the sum of different ingredients with the same classification.	**Comment acknowledged.** Currently all the substances are treated individually, in alignment with the updated Rinse-off Cosmetics criteria. No indication has been brought forward that this might be an issue.
LD	Thresholds/ limits	0,01% threshold has to be reconsidered as suppliers are most of the time not able to provide data till this concentration. This is explained by the fact that for REACH down to 0,1% is compulsory but not below.	**Comment rejected.** Detergent ingredients have been shown to have different levels of impact on the environment. As some substances can have impacts even at very low concentrations, the requirements for them to be considered "regardless of concentration" (and for the rest to be considered at 0,01%) has been discussed multiple times at EUEB level and the conclusion has always been that the EU Ecolabel seeks to set the highest standards for performance and therefore should be above the REACH 0,10% limit.

8.5.2 Further research: horizontal issues

Due to the schedule of the previous revisions, different approaches were taken to deal with measurement thresholds and an exercise in harmonisation was undertaken in this work. The differences in measurement thresholds found in the criteria sets for the six products groups are summarised in Table 6 of the Technical Annexe prepared for the 1st AHWG meeting [4].

Measurement thresholds indicate the concentration of ingredients in the product for which documentation of compliance is required. As the ingredients of detergents end up in wastewater after use and are not always all removed in wastewater treatment plants, even small quantities can potentially have an impact on ecosystems. In the current sets of criteria, there are two measurement thresholds – 0,010% by weight of the final formulation for the majority of ingredients and a lower threshold defined as "regardless of concentration" or "irrespective of weight" assigned to ingredients such as fragrances and preservatives, with some exceptions. There is no set definition as to what constitutes the minimum requirement for "regardless of concentration" or "irrespective of weight", which has been pointed out by stakeholders having the potential to lead to confusion. These two thresholds are below the REACH (0,1%) and CLP (1%) thresholds but the EU Ecolabel has adopted the policy of imposing stricter criteria in order to promote highest environmental standards.

As EU Ecolabels for detergents require applicants to provide Competent Bodies with the full formulation of products (indicating trade name, chemical name, CAS number, DID number, the ingoing quantity, the function and the form of all ingredients). Thus it should be understood that in the definition of "ingoing substances", "regardless of concentration" means that if a substance that is a preservative, fragrance or colouring agent and is on the bill of material, even in quantities lower than 0,010%, it should be considered in criteria compliance calculations. Two exceptions exist for these thresholds, as explained below.

The first exception is for parts (b) of the criteria on excluded or limited substances – it was agreed during the revision of the EU Ecolabel on Rinse-off cosmetics that the requirements shall be met for all ingredients for which concentration exceeds 100 ppm. This is also aligned with the horizontal approach on hazardous substances for formulations.

The second exception is for part (a) and (c) of the criteria on excluded or limited substances. During consultation with stakeholders, it also came to light that this part of the criteria was interpreted differently depending on the Competent Body in charge of an applicant's dossier. Some interpreted the part (c) to mean that if a substance was below the thresholds to be considered an ingoing substances (i.e. below 0,010% for all substances other than fragrances, colouring agents or preservatives), it was still allowed even though it was on the excluded list. Others interpreted it to mean that if a substance was on the excluded list, it could not be present in the product even if it was below the thresholds to be considered an ingoing substance. As the substances listed on the excluded list have significant environmental impacts, it is proposed to consider that the second interpretation is correct. The criteria text has been updated to reflect this fact.

With regard to point (c) the EU Ecolabel Regulation allows SVHC to be present only upon derogation and up to a specific concentration. In this criteria revision no such derogations were received.

Furthermore, as multiple stakeholders expressed confusion on the threshold levels for the different criteria, it is proposed to include an explanatory table in each User Manual showcasing the limits (e.g. Table 18 is for the Laundry Detergents criteria).

The revision of the wording of the assessment and verification requirements needs the rewording of the preferences of the competent bodies regarding the recognition of the attestations that demonstrate the compliance within the criteria requirements. According to the EU Ecolabel Regulation (EC) No 66/2010, it is stated in article 9 (7) that:

> *"Competent bodies shall preferentially recognise tests which are accredited according to ISO 17025 and verifications performed by bodies which are accredited under the EN 45011 standard or an equivalent international standard. Competent bodies shall collaborate in order to ensure the effective and consistent implementation of the assessment and verification procedures, notably through the working group referred to in Article 13"*

However, at present the accreditation of both tests and testing bodies in accordance with the above mentioned schemes is not in place, since these schemes have been revised and replaced by other ones. In order to avoid a possible obsolescence of the text proposed an open formulation has been included.

The new wording proposes an open text that does not mention the standard specifically but that mentions that the standard for the accreditation should be harmonized and consequently well-known, accepted across Europe and or recognized quality. The text proposed includes the wording "bodies that are accredited according to the relevant harmonized standard for testing and calibration laboratories' and "verifications by bodies that are accredited according to the relevant harmonized standards for bodies certifying products, processes and services' to put into words the above mentioned ideas.

8.6 Reference dosage (and functional unit)

The current EU Ecolabel criteria sets indicate in different ways which unit and which reference dosage should be used when calculating compliance with a criterion (Table 20). Some differences are due to the fact that the detergents have different uses but wording can be aligned for similar products. Moreover, the "functional unit" specified in several EU Ecolabels does not actually refer to the functional unit – for example, the functional unit for a laundry detergent is a kilogram of dry laundry to be washed and not grams [of product] per kilogram of laundry – but rather to the measurement unit. This error in the statement of the functional unit leads to what might appear inconsistencies in some criteria (i.e. for LDs Criterion 1 referenced both "g/kg wash" and "ml/kg wash" when it was stated that the functional unit was "g/kg wash" and could lead one to believe that the "ml/kg wash" was an error).

Table 20. Summary of texts related to functional unit and reference dosage

	LD	IILD	DD	IIDD	APC	HDD
Functional unit	g/kg wash (grams per kilo wash)	g/kg laundry (grams per kilo laundry)	Quantity of product required to wash 12 place settings with a standard soil	g/l washing solution (grams per litre washing solution)	(nothing explicit)	(nothing explicit)
Reference dosage	Quantity recommended by the manufacturer necessary for: - 4.5kg load (heavy duty detergent) - 2.5kg load (low duty detergent)	(nothing explicit)	Quantity necessary for normally soiled dishes and 12 place settings	(nothing explicit)	Quantity necessary for 1l of washing water (undiluted products) or 100g (ready-to-use products).	Quantity necessary for 1l of washing water for normally soiled dishes.

It is proposed to remove the mention of a functional unit and state that the "reference dosage" is used for all calculations, where "reference dosage" always refers to the quantity recommended by the manufacturer for a specific application described in the EU Ecolabel text. A section is dedicated to the reference dosage for each EU Ecolabel criteria.

8.6.1 Laundry detergents

In the current criteria for Laundry Detergents, a difference is made between the "functional unit" and "reference dosage". It is proposed to remove the paragraph on the functional unit as "g/kg wash" is not a functional unit but a measurement unit and it is not used consistently throughout the text. The reference dosage for all types of detergents is proposed to remain the same. For stain removers, the current criteria state the reference dosage as a footnote for all concerned requirements and it is proposed to state explicitly the reference dosage for stain removers in the table.

Stakeholder feedback highlighted the need for a conversion table between mmol $CaCO_3$/l and another commonly used unit of water hardness, German degrees. Section 8.7 discusses this issue in more depth.

8.6.2 Industrial and institutional laundry detergents

In the current criteria for I&I Laundry Detergents, a "functional unit" is provided and is further explained in a criterion on product dosage. In an effort to harmonise the different EU Ecolabels related to detergent products, it is proposed to put all the information under "reference dosage".

8.6.3 Dishwasher detergents

In the current criteria for Dishwasher Detergents, a difference is made between the "functional unit" and "reference dosage" although the two are almost identical. It is proposed to remove the paragraph on the functional unit, with the reference dosage remaining the same for dishwasher detergents. For rinse-aids, no reference dosage is provided in the current criteria text, the reference dosage for rinse aids is indicated in the criteria where it is required (e.g. total chemicals, CDV, aNBO, anNBO) and it is proposed to indicate it alongside the reference dosage for detergents.

8.6.4 Industrial and institutional dishwasher detergents

In the current criteria for I&I Dishwasher Detergents, a "functional unit" but it is not systematically used through the criteria text. In alignment with the other EU Ecolabel criteria, it is instead proposed to explicitly state the reference dosage that is to be used throughout the criteria.

8.6.5 Hand dishwashing detergents

No changes are proposed to the reference dosage for hand dishwashing detergents.

8.6.6 Hard-surface cleaning products

Following comments from stakeholders that undiluted products are often at a disadvantage compared to RTU products, it is proposed to consider 1 litre of in-use cleaning solution for both as the reference dosage. As their name indicates, RTU are ready to be used so 1 litre of in-use cleaning solution corresponds to 1 litre of RTU product. For undiluted products, 1 litre of in-use cleaning solution is for normally soiled surfaces. Thus, for RTU products, all values in the current criteria text dependent on the reference dosage should be multiplied by 10 in order to be compared with the ones presented in this report.

Some stakeholders mentioned whether the proposed approach of considering a set amount of RTU product and undiluted products provides realistic results, as depending on the product and application, the real dosages will be very different. It is exactly because of this great variability that no reference is made to the dosage recommended by the manufacturer – indeed it is not possible to identify one application for which the recommended dosage should be stated. For example, for all-purpose cleaners, the application could be the cleaning of $1m^2$ of normally soiled kitchen counter or a shelf, the two require different amounts of product. The same goes for sanitary cleaners, should one application be considered to be the cleaning of tiles or of a sink? Due to this high disparity, the existing approach is proposed to be maintained.

A wording change is proposed from "washing water" to "cleaning solution" as it is more representative of what is the final result after dilution for many products, especially professional-grade – a product that is similar to a ready-to-use product.

8.7 Water hardness

Table 21. Stakeholder comments regarding water hardness

Product group	Comment area	Stakeholder feedback	IPTS analysis and further research
LD (ALL)	Dosage	Please add German degrees dH as well and indicate if this is regarded as soft or hard water.	**Comment accepted.** The Detergents Regulation only mentions mmol CaCO3/l and the German Detergents Acts gives a conversion table. A conversion chart can be added to the User Manual to ease the transition between the two units. For Laundry Detergents, whenever comparisons are made with the Nordic Swan criteria (and also other ecolabelling schemes), it is noted that the values are calculated for soft water and not water with medium hardness and the values are never compared directly.
LDs	Dosage	(comment was included in the attachments) Be careful comparing the dosage requirements for laundry detergents! In the EU Ecolabel the limits for dosage aren't set for soft water (< 1,5 mmol CaCO3/l) but for a water hardness of 2,5 mmol CaCO3 /l which is usually the lower limit for hard water. The dosage of laundry detergents is usually strongly dependent on water hardness. Please check this in this regard.	

Water hardness is referenced in all current detergent EU Ecolabels although it does not directly intervene in all criteria. In some it is referenced in °dH (deutsche Härte, degree of General Hardness) and in others in mmol $CaCO_3$/l. As the Detergents Regulations refers to water hardness in mmol $CaCO_3$/l, this unit is proposed to be consistently used throughout the concerned EU Ecolabels.

The Detergents Regulation specifies that 2,5 mmol $CaCO_3$/l is considered to be medium water hardness but the levels of soft and hard water are not explicitly cited. Nevertheless the commonly agreed upon thresholds for water hardness throughout Europe (as found in the German detergents and cleansing agents act [14]) are indicated in Table 22.

Table 22. Classification of water hardness ranges according to the German Washing and Cleansing Agents Act

Water hardness	mmol $CaCO_3$/l	Equivalent °dH
Soft	< 1,5	< 8,4
Medium	1,5 – 2,5	8,4 – 14
Hard	> 2,5	> 14

It should be noted that these ranges are not aligned with the ranges used in the current EU Ecolabel criteria for I&I products (0-6°dH, 7-13°dH, and >14°dH), nevertheless when asked if this would have an impact on products and/or applications for an EU Ecolabels, no comments were received from stakeholders. One possibility is that water hardness is of no consequence for I&I products as the set-ups necessary include water softening components, as washing in soft water necessitates less detergent, and the water inside the washing machine does not correspond to the water coming in from the utilities supplier. While this type of component should be of interest to all I&I professionals, no data exists on the spread of their use

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8.8 Dosage requirements

8.8.1 Laundry detergents

As dosage is recognised as an important factor for laundry detergents, the environmental impacts of product dosage were investigated in the LCA performed for laundry detergents (Section 4.9.3 of the Preliminary Report). The results of the sensitivity analysis found that an increase in 20% in the dosage results in an impact increase of 16% for terrestrial ecotoxicity and up to 13% for other impact categories.

Dosage thresholds: A review of dosages for laundry detergent products (both those that have been awarded the EU Ecolabel and that have not) found that most products met the current dosage requirements (42 out of the 45 products surveyed). The investigation also revealed that, in general, light-duty detergents have lower dosages than heavy-duty detergents and liquid products also tend to indicate lower dosages (note: the density of the products was not considered in this study), as show in Table 23.

Table 23. Dosage ranges for laundry detergents

	No.	Dosage (ml or g/kg wash)			Current limit (ml or g/kg wash)	Proposed limit (g/kg wash)
		Min	Max	Average		
Heavy-duty liquid	19	4,66	17,00	10,13	17	16*
Heavy-duty powder	21	10,00	22,22	15,13	17	16
Low-duty liquid	5	6,67	11,11	9,02	17	10
NB: Comprehensive data for stain removers and fabric conditioners not available * due to the density of most liquid laundry products, 16g of liquid laundry detergent corresponds to fewer than 16ml.						

The limits proposed would allow 80% of the products surveyed to be able to meet this criterion. Although 80% might seem a high number, this criterion is one of many and the convergence of all the criteria should highlight the best environmental performance on the market.

The proposed thresholds are also coherent with those used in other ecolabel schemes (Table 24), albeit slightly higher than those used by Good Environmental Choice Australia. It should be noted that the EU Ecolabel thresholds are for medium water hardness and not soft water as in many other schemes.

Table 24. Dosage requirements for other ecolabelling and voluntary schemes

Scheme	Liquid detergents	Powder detergents	Light-duty
AISE Charter for sustainable cleaning	17 ml/kg wash	17 g/kg wash	
Nordic Swan	14,0 ml/kg wash For soft water	14,0 g/kg wash For soft water	14,0 g/kg wash For soft water
Good Env. Choice Australia	11.0 ml/kg wash For soft water	9 g/kg wash For soft water	

***Alignment between thresholds for liquid and powder detergents*:** During consultation with stakeholders, the question of the density of products was brought up. Not all liquid products have the same density but they should, nevertheless, be evaluated on the same grounds. As product density is easily obtained, and often indicated on Safety Data Sheets, it is proposed to establish a single threshold indicated in "g/kg wash". Although during the survey of products on the market, it was found that the dosage for liquid products (in ml/kg wash) tended to be lower than for powder products (in g/kg wash), the same threshold is proposed for both types of products as liquid products have densities higher than 1.

8.8.2 Dishwasher detergents

As dosage is recognised as an important factor for dishwasher detergents, the environmental impacts of product dosage were investigated in the LCA (Section 4.5.1 of the Preliminary Report). The results of the sensitivity analysis found that a 20% decrease of product dosage lead to environmental gains of up to 7%. The impact is relatively small due to the significance of the high impacts related to the product use phase.

Dosage thresholds: The criterion included in the current EU Ecolabel text considers the total chemicals contained in the product. The impacts of these chemicals are also considered in the toxicity to aquatic organisms criterion as well as in the one of their biodegradability. It is proposed to change the aim of the

criterion to target the concentration of products, as in the EU Ecolabel for laundry detergents, and not simply the chemicals. This would allow to also influence the concentration of products, and thus transport and raw material extraction can be impacted.

Thus, the name of the criterion is proposed to be changed to "Dosage requirements" and to consider the whole reference dosage and non-only the dry content. The limits proposed are slightly higher than those found in Nordic Swan, although it should not be forgotten that Nordic Swan criteria are set for soft water and the EU Ecolabel for medium hardness water. A sample study of the market leaders for consumer dishwasher detergents found that multi-function tablets weigh around 19 g and single-function tablets do not weigh over 17g, but liquid and gels tend to have a slightly higher dose, with most EU Ecolabel ones being around 20-20,5g/wash.

Rinse aids: During stakeholder consultation, it was proposed to set a dosage requirement for rinse aids as it was claimed that it should be feasible to set a rinse aid dosage on the machines. Further investigation of automatic dishwashers was undertaken to explore the issue.

Dishwashers generally either contain:

- A compartment which is charged manually with the required rinse aid per wash. It is incumbent upon the consumer to establish the right amount depending on water hardness. It is reported that this is possible, by iteration, and may be assisted by higher viscosity products which prevent over-dosing.
- A rinse-aid reservoir which is routinely charged with product allowing injections of small amounts of rinse aid over multiple wash cycles. These quantities are pre-programmed into the machine, but the actual volume per application is not known, and may well be variable between different machine manufacturers although the standard appears to be setting 1 through 6, with 3 or 4 (equivalent to 3 or 4ml) as the default. For example in Indesit machines [15], the dosage can be adjusted manually to cope with water conditions. The majority of devices examined appeared to operate in this mode (e.g. Miele machines' factory default setting is 3ml) and product manufacturers also use a standard dose of 3ml (e.g. Fairy).

Thus it is possible to adjust rinse aid dosage, nevertheless the dosage in most case is still highly dependent on the washing machine manufacturers, water hardness and user preferences, with 3ml appearing the standard dose dispensed by a majority of machines. Due to this fact, it is not proposed to set a maximum dosage requirement, but rather continue to use the standard 3ml.

8.8.3 Hand dishwashing detergents

During consultation with stakeholders, it has been suggested that a criterion should be set indicating the maximum dosage. Further research conducted on the issue showed that in realistic settings, the amount of product used for dishwashing highly depends on the person. Stamminger et al. [16] found that the average amount of product used by Europeans is 3.2g for one place setting but the manner in which these 3.2g were used greatly varied – some people fill the sink with soapy water and then rinse, others keep the water flowing and put the product on a sponge, others still dilute the product in a small amount of water next to the sink where they dip the sponge from time to time.

AISE recommends the use of 5ml for 5 litres of wash water (or "per job", with a "job" being the washing of four place settings [17]. This amount is quite below what has been observed as used (3.2g x 4 = 12.8g >> 5ml even if the product's density is high), suggesting that if producers attempted to meet a requirement on maximum indicated dosage, they might indicate dosages that are much lower than what is actually used, just in order to satisfy this first basic requirement. Currently, the fitness for use testing is done against a standard generic product and is relatively easy to pass, meaning that products can pass even when small amounts are used.

Nordic Swan also has a requirement on maximum dosage, 1g/l of wash water (using soft water, meaning the amount would be higher for water of medium hardness) although it is unknown how the requirement was set. In light of these findings, it is currently proposed to refrain from setting a maximum dosage requirement for the EU Ecolabel but rather favour a smaller recommended dosage amount through criteria such as packaging and CDV.

8.8.4 Feedback from stakeholders following 1st AHWG meeting

Table 25. Stakeholder comments regarding dosage

PG	Comment area	Stakeholder feedback	IPTS analysis and further research
LD	Concentrated products	We think that the European Commission should reconsider the promotion of concentrated products due to new rules classification and labelling according to the regulation nº 1272/08 (CLP).	**Comment acknowledged.** While it can be expected that more products will be classified under CLP as more substances will be classified, currently no information has been forthcoming from producers as to have the new CLP classification requirement will impact detergent products. As there are environmental gains in the production and use of concentrated products, it is proposed to continue with the tightening of criteria that favour the concentration of products, such as maximum dosage requirements and packaging requirements. These criteria, nevertheless, do not require for products to be extremely concentrated as these present potential environmental hazards and are the ones most likely to be classified under CLP.
LD	Concentrated products	Concentrated laundry detergents are becoming the standard. In Belgium 71% of the laundry detergents sold in 2012 were concentrated (12% in 2008). Also producers and distributers (e.g. press release Colruyt 2011) are moving to concentrated products. See press release P&G, article prevent pack Henkel and an important Belgian Supermarket.	**Comment acknowledged.** There is no standard (industry or legislative) definition for "concentrated" products, thus only the lowering the dosage threshold can push towards the increased use of these types of products. Moreover, there are potential environmental trade-offs when it comes to very concentrated products, such as a much higher impact if overdosing or a spillage occurs and safety implications due to the fact that concentrated products tend to have more corrosive formulations and necessitate stabilisers.
LD	Dosage	We do not agree with the new limits proposed for laundry products. In addition, we consider meaningless to adopt different limitations for liquids and powders. Suggested dosages are, more or less, equal to the lower existing on the market.	**Comments partially accepted.** The same threshold is proposed to be adopted for powder and liquid products. In terms of threshold, the proposed values are based on a market survey and it has come to light that products that are aimed at colour fabrics, etc. ("light-duty") have significantly lower dosages, thus making a lower threshold possible. The reasoning proposed based on "real dosage" is at

		The dosage for light-duty detergents should be the same as for heavy-duty detergents. (Rationale: The light-duty programmes in washing machines use much more water that the heavy-duty programmes, which will result in a higher dilution of the detergent. So, even if the dosage is the same for both types of products, the 'real dosage' in the washing process will always be lower for the light-duty detergents.)	odds with how the dosage is calculated as it is based on amount of product per kilogram of clothes washed and not water used.
		Dosage : 14mL/kg pour les lessives liquide est trop restrictif. A notre connaissance en France, si l'on exclue les doses hydrosolubles liquides, il n' y a pas ou très peu de lessive HDD à un dosage inférieur à 14.5mL/kg. Le fait d'encore plus concentré les formules de lessive vont amener à des classifications irritantes ou corrosives des lessives HDD ce qui est dommageable. Nous proposons un dosage maximum de 15mL/Kg pour les lessive liquide HDD ce qui réduit le dosage par rapport aux critères actuels	
LD	Dosage	(comment was included in attachments) In our view it is at least important to exclude so called "Jumbo"-products. Concentrated product in this regard would mean that no or only very little anorganic salt is added. These salts have the only function to maintain the "pourability" of powders and aren't really needed or at least not needed in this high portion. Often sodium sulfate is used. In German these laundry detergents are sometimes called "Jumbo"-packages. http://www.t-online.de/lifestyle/besser-leben/id_65987752/waschmittel-bei-jumbopackungen-wird-mit-fuellstoffen-gemogelt.html At least in Austria the sold products which include considerable amounts of these salts are in the minority and it is important that these products cannot be labeled with the EU Ecolabel. But this is no problem - the given limits for dosage exclude them anyway. We don't feel the need to set the dosage as low as possible having valuable criteria on the special chemicals included are more important in our point of view.	**Comment partially accepted.** The research results summarised below are in agreement with the main statement of the commentator – the jumbo products would not be able to pass the dosage requirement. Nevertheless, it is proposed to lower the threshold on dosage. Follow-up research: Jumbo products are large volume retailed packages of detergents that appear to offer value [18]. However, they may be padded with fillers, simple salts, ostensibly for flowability, which simply means that a greater volume of product is needed compared to a more concentrated formulation. The jumbo pack may therefore offer lower value per wash by requiring 50-70% more product per wash for powder products. An interesting reason for extra fillers is provided to one manufacturer: in essence, consumers are known to overdose, perhaps because they do not believe that low volumes of concentrated formulation actually work. Therefore, specifying a higher volume of detergent including an inactive, neutral ingredient, satisfies this expectation that more volume is better. However, there may be negative environmental effects associated with the

			additional burden of salts, typically sodium sulphates. A number of examples are provided in the article referenced to illustrate the dosages for jumbo formulations (135 ml to 215ml) and these would not be able to meet the dosage criterion, even with very low densities.
DD	Dosage	We welcome the JRC proposal to move from "total chemicals" to "dosage requirement" in order to promote concentrated products for DD. The dosage should be increased for the case of liquids. (The currently proposed values for single- and multi- function products, 18 and 20 g/wash, respectively, would make it impossible for any liquid dishwasher machine detergent to be ecolabelled. This type of product is still used in countries such as France. The product would have to fulfil the CDV criterion in any case. Please refer to the A.I.S.E. ASP documentation for the Household Manual Dishwashing Detergents for more information.) Although we recognize that it is sometimes difficult to estimate the appropriate amount of product needed according to the cleaning situation, we believe that it is feasible to set a dosage requirement for rinse aids for dish washers.	**Comments partially accepted.** The dosage proposed for DD does not depend on whether the products are liquid or powder, all dosages are measured in g/wash. An update is proposed for the dosage requirements for DD. For rinse aids, further research did not yield that modern dishwashers offer an easy and efficient way for consumers to dose this type of product.
HDD	Dosage	Although we recognize that it is sometimes difficult to estimate the appropriate amount of product needed according to the cleaning situation, we believe that it is feasible to set a dosage requirement for HDD detergents.	**Comment acknowledged.** Further research has been done on this issue, as follows: In realistic settings, the amount of product used for dishwashing highly depends on the person. Stamminger *et al.* [16] found that the average amount of product used by Europeans is 3.2g for one place setting but the manner in which these 3.2g were used greatly varied – some people fill the sink with soapy water and then rinse, others keep the water flowing and put the product on a sponge, others still dilute the product in a small amount of water next to the sink where they dip the sponge from time to time. AISE recommends the use of 5ml for 5 litres of wash water (or "per job", with a "job" being the washing of four place settings [17]. This amount is quite below what has been observed as used (3.2g x 4 = 12.8g >> 5ml even if the product's density is high), suggesting that if producers attempted to meet a requirement on maximum indicated dosage, they might indicate dosages that are much lower than what is actually used, just in order to satisfy this first basic requirement. Currently, the fitness for use testing is done against a standard generic product and is relatively easy to pass,

			meaning that products can pass even when small amounts are used. Nordic Swan also has a requirement on maximum dosage, 1g/l of wash water (using soft water, meaning the amount would be higher for water of medium hardness) although it is unknown how the requirement was set. Thus, at this stage, it is proposed to refrain from setting a maximum dosage requirement for the EU Ecolabel but rather favour a smaller recommended dosage amount through criteria such as packaging.

Indications for maximum dosages that can be recommended by manufacturers are indicated in two product groups – laundry detergents and dishwasher detergents. As applications vary greatly for I&I products (for example the dosage for washing glasses in a bar is different than that used for dishes in a cafeteria), no indications are proposed to be given as to the maximum dosage that can be recommended. The same is true for hard-surface cleaning products – their applications are very diverse, even when dividing products into subcategories such as "all-purpose cleaners" or "sanitary cleaners". For hand dishwashing detergents, applications are not varied but user habits are, as explained in Section 8.8.3 below.

8.9 Automatic dosing systems

Common text template – AUTOMATIC DOSING SYSTEMS
For multi-component systems, the applicant shall ensure that the product is used with an automatic and controlled dosing system. In order to ensure correct dosage in the automatic dosing systems, customer visits shall be performed at all premises using the product, at least once a year during the license period, and they shall include calibration of the dosing equipment. A third party can perform these customer visits. Assessment and verification: The applicant shall provide a written description of responsibility for, frequency and content of customer visits.

Industrial and institutional multi-component systems are difficult to dose as there is more than one product in the system. The use of a well maintained automatically and on-site calibrated dosing system limits the risk of incorrect dosing and, thus, the risk of extra environmental impacts. Performing a system's calibration is both in the interest of the user, as overdosing has increased monetary costs and underdosing might result in bad performance of the product, and of the manufacturer, as correct dosing ensures that the product's best performance is achieved.

It is proposed to change the wording in order to allow for the case where an automatic dosing system is already installed at a client's premises – the applicant shall just ensure that it functions correctly with their product and is not obliged to offer the installation of the dosing system.

In the case of I&I dishwashers, a sentence has been removed that granted an exemption for installations that were too far away and could not be visited annually – stakeholder consultation yielded that this is a very rare occurrence and it is in the best interest of the client to get annual visits, even if they are locate in a remote area.

8.10 Toxicity to aquatic organisms

Common text template – TOXICITY TO AQUATIC ORGANISMS

The critical dilution volume (CDV) of the product must not exceed the following limits for the reference dosage:

Table 26. Limit value of CDV per product type

Product type	Limit CDV

Assessment and verification:

The applicant shall provide the calculation of the CDV of the product. A spreadsheet for calculating of the CDV value is available on the EU Ecolabel website.

The CDV is calculated for all ingoing substances (i) in the product using the following equation:

$$CDV = \sum CDV(i) = 1000 \cdot \sum dosage(i) \cdot \frac{DF(i)}{TF(i)}$$

Where:

dosage(i): weight (g) of the substance or mixture i in the reference dose,

DF(i): degradation factor for the substance or mixture i

TF(i): toxicity factor for the substance or mixture i

The values of DF(i) and TF(i) shall be as given in the DID list Part A (Appendix I). If an ingoing substance is not included in the DID list Part A, the applicant shall estimate the values following the approach described in the DID list Part B (Appendix I).

(only applicable to I&I products)

Because of the degradation of certain substances in the wash process, separate rules apply to the following:

hydrogen peroxide (H2O2) – not to be included in calculation of CDV

peracetic acid – to be included in the calculation as acetic acid.

8.10.1 Feedback from stakeholders following 1st AHWG meeting

Table 27. Stakeholder comments regarding toxicity to aquatic organisms

PGs	Criterion areas	Stakeholder comments	IPTS analysis and further research
ALL	Calculation	Under its current form, the DID list Part B only deals with substances, not mixtures. The CDV should be calculated on the sole basis of data available at the substance level (see rationale). Degradability is not a relevant concept for mixtures: According to Regulation (EC) No 1272/2008: "[...] data from degradability and bioaccumulation tests of mixtures cannot be interpreted; they are meaningful only for single substances".	**Comments partially accepted.** The DID list Part B does not, indeed, address mixtures and the calculations should be done on the basis of substance data. The DID list Part A does list some data for generic substances and mixtures such as "fragrances" but to be used in the case where it is impossible to obtain more precise data. The text has been updated to reflect that all calculations should be made at substance level, whenever possible.
ALL	DID list	Are these values calculated from DID-2007? CDV-values must be lowered. The DID-list 2014 gives chronic values for many ingredients and a recalculation is necessary.	**Comments accepted.** Whenever CDV values were available calculated with the 2014 DID list, these were included in the report in the respective chapters. An overview of the observed impact of changing from the 2007 to the 2014 DID list is included below.
ALL	Calculation method	A.I.S.E. favours a risk-based approach. We have proven that it is possible to address this topic with a risk-based approach and we have developed the "Environmental Safety Check" tool (http://www.sustainable-cleaning.com/en.companyarea_documentation.orb). We would suggest to consider this as an alternative and we are available to provide more information and share our experience in building and using such a tool.	**Comments acknowledged.** During the early stages of the revision process, several methods of assessment of aquatic toxicity were assessed. Each relies on different principles and assumptions and each has benefits and drawbacks and, in light, of the constraints of the project, CDV was chosen as the one that will be used for this revision. It is true that it is majorly hazard-based and takes an approach based on the principle of precaution, but it fits with the philosophy behind the EU Ecolabel. The CDV approach also encourages further research on the long-term effects of substances as the DID list is revised if new chronic data becomes available.
HDD	CDV	We believe the proposed value is too high. We have made some limited preliminary calculations and the values vary between 1550 and 650.	**Comment acknowledged.** Stakeholders were contacted in order to obtain more information, but no new CDV values were received.
APC	CDV / NBO	1) According to the legislation of many EU countries the wastewaters of non-domestic buildings must be treated before entering into the public sewers unless they are assimilated to the	**Comments partially accepted.** Currently consumer and professional products are covered by the same EU

		domestic ones. In Italy, the Table 3 of the "Allegato 5" of the D.L. 152, for instance, sets a maximum for surfactants at 4 mg/l. Should this value be used to calculate the CDV for the professional APC sanitary cleaners and window cleaners? 2) The APC are more and more frequently used with dosing systems. This becomes "a must" for the professional cleaners. We have experienced up to a 50% reduction, in the latest 5-10 years, for the pro-capita consumption of the detergents on the professional market. Some ecological culture and the present economic crisis have pushed the professional cleaners to the use of dosing systems, very often together with super-concentrated products. Suggest to make derogation for the professional cleaning products as far as the CDV calculation is concerned. For instance, to modify the DF value from the present 0,05 indicated on the DID list to up to 0,005. Another problem is also the cost for the companies to reformulate the products to comply with the new CDV values. Another item that should be considered is the Anaerobic Biodegradability. Another item that should be considered is the Anaerobic Biodegradability. Very performing anionic surfactants like the LAS is not totally anaerobically biodegraded. However the LAS combined with other surfactants gives a synergic cleaning action that helps reducing the other surfactants concentration in the wastewater.	Ecolabel and there has not been a strong indication that the formulations of domestic and professional products vary greatly or that they are used in very different manners, as it is the case for laundry and dishwasher detergents. The calculation of the CDV values depends on the reference dosage, which itself depends on whether a product is ready-to-use or needs to be diluted before use. The exact amounts of substances found in the reference dosage (100g for RTU and recommended dosage for 1L of washing water for undiluted products) should be used and not what is indicated as a maximum in a law. Concerning a lower of DF, the calculation of DF is not linked to the dosage but rather to degradation, therefore the proposal cannot be accepted. In terms of costs, manufacturers of products have not highlighted reformulations costs due to CDV changes as a major impact.
APC	CDV / values	There are four issues in the new criteria I like to rephrase to make the criteria more environmental friendly and keep focus on improvements: 1) CDV limits for All-purpose cleaners (APC) and sanitary cleaners. It is strange that CDV limits are calculated and compared in two different ways for RTU and undiluted products. For RTU it is per 100 gram however undiluted products it is per 1 liter (= 1000 gram) washing water. In case a producer make two products: a) RTU (10% surfactant); CDV = 50,000 b) undiluted product (100% surfactant) customer has to dilute this to a 10% solution. CDV = 500,000 due to the differences of calculation 100g vs 1 liter (=1000 g). Both products will give the same chemical waste however the CDV of the undiluted product is 10 times higher. Unfortunately the CDV limit is 52000 vs 12200 ca 4.3 x lower.	**Comment rejected.** While the example proposed is interesting, it appears to be unrealistic. Consultation with manufacturers of professional-grade products yielded that undiluted products containing more than 30% active content are extremely rare on the market and most contain significantly lower percentages. Moreover, the data collected on different products showed that the undiluted products tended to have a much less concentrated in-use washing solution than ready-to-use products, and thus a lower final CDV. When contacted for examples of CDV data, only a limited amount of CDV data was provided for products that did not meet the EU Ecolabel criteria.

		The undiluted product will probably not match with the CDV limit and cannot get an EU-Ecolabel as the undiluted product uses less packaging and less transport (of dilution water) which mean a better carbon footprint . From an environmental point of view the environment undiluted products are favourable this is opposite to the EU-Ecolabel criteria. Our advice is: Calculate the concentrate to the intended use concentration and use the RTU Limit.	
APC	CDV / Values	Concernant l'ajout du nettoyant vitres en dilution au scope de produits rectifiables c'est une bonne chose. Cependant, les critères VCDtox et VOC nous semblent beaucoup trop contraignants. De notre point de vue, un produit nettoyant vitres à diluer est automatiquement un produit vitre sur- concentré à diluer pour recharger un flacon spray vitre PAE (comme par exemple les berlingots d'assouplissant qui servent à recharger un flacon à compléter à l'eau). Une fois dilué, la teneur en VOC ou le VCDtox final est le même qu'un produit prêt à l'emploi. Les contraintes VCDtox et VOC devraient être alors au même niveau que les contraintes des produits vitres PAE. Si la commission souhaite réellement différencier les critères VCD tox et VOC entre ces 2 sous catégories de produit, nous proposons pour les nettoyants vitres en dilution une limite de VCDtox de 1800L et une limite de VOC de 2%.	**Comment accepted.** The thresholds have been reworked to be less demanding for undiluted products.
APC	CDV	We believe the CDV values could be more strict, certainly for RTU Sanitary cleaners. Due to the changes of the DID list we have not yet been able to collect sufficient data to verify the proposed limits. I question if the CDV value is as strict for concentrated products as it is for RTU products? Are we being easy on the RTU products?	**Comment acknowledged:** A few data points have been provided with the updated 2014 DID list in order to update the CDV threshold. Stakeholder consultation yielded that currently some undiluted sanitary cleaners are able to pass the CDV thresholds but the data points are in a very broad range and it has been impossible to pin point the exact reasons and substances why some formulations have higher CDV values than others. See Section 7.5.
DD	CDV	When it comes to product types that are not widespread under the Ecolabel certification, for example the rinse-aid for domestic use, those are too few to make a meaningful evaluation. It would not be based on real data, so it is without interest to propose a lower limit.	**Comment acknowledged.** For the CDV evaluation, for all the product groups, JRC does not have access to exact formulations and it has been difficult to obtain a large set of CDV data points, therefore it is true that the new thresholds proposed are not based on a statistically significant data set. Nevertheless, the fact that three products have successfully applied for an EU Ecolabel and all three have CDV values well below the 10 000L threshold shows that it is technically feasible. As the EU Ecolabel strives to uphold

			a good environmental standard, the proposal for a CDV threshold at 7 500L was thus considered realistic.
DD/IIDD	CDV	CDV for dishwashing for both consumer and professionals CDV calculation is based on very conservative and hazard-heavy assessment. Amfep proposes that alternative method should be seriously assessed. If risk to the environment is scientifically assessed through REACH dossiers or peer-reviewed article, exemption of assessment should be considered. A.I.S.E's ESC tool is a good example. The newly conducted tests for subtilisin lead to two entries in the updated DID list – protease and non-protease. Due to the test data, the new DID data of protease (subtilisin) would give significant impact to CDV calculation. As we stated in the derogation request for subtilisin, the environmental impact of subtilisin is in reality nil. We therefore request that an alternative assessment method should be developed reflecting risks in reality or adjust CDV limits. Otherwise it would be difficult for an applicant for ecolabelling to meet all other requirements e.g. low dosage to a washing liquid, low temperature and good washing performance.	**Comment acknowledged.** The EU Ecolabel has elected to take an approach to aquatic toxicity employing toxicity and safety factors, which highly depend on the test results available and the data submitted for review. It must be acknowledged that the state of knowledge and completeness with respect to toxicity factors - chronic and acute - is under permanent review. This review is outside the scope of the EU Ecolabel revision process per se; clear anomalies should be brought to the attention of DG ENV and the team in charge of the revision of the DID list. At this stage, no changes are proposed to be made to the EU Ecolabel criteria to deal with this issue.
IIDD	CDV / values	BEUC and EEB are very concerned that no improvement has been brought to the CDV limits of IIDD.	**Comment acknowledged.** The EU Ecolabel criteria revision process is highly dependent on the quality of market data and product formulation data received from stakeholders. Without sound data that shows a pattern, changes to criteria - especially quantitative ones - cannot be substantiated. The current position is that - notwithstanding that substantiating information has not been received from stakeholders - there are few applications within the IIDD group; tightening criteria might lower applications further. Any and all information concerning exact formulations of IIDD/IILD products would be highly appreciated by the team in charge of the revision in order to be able to propose more exact thresholds.
IILD	CDV / values	BEUC and EEB are very concerned that no improvement has been brought to the CDV limits of IILD. The IILD average values of existing products in the market are twice to three times higher than the current CDV limits.	
LD	CDV	(In response to: "Should the CDV values be stricter?") No	**Comments partially accepted.**

		In a general way, lowering CDVs will lead to a worst performance if performance assessment is not going to be more demanding. Ecolabel products must have a real success on the market field in order to have a real impact on the environment, this is not going to happen lowering performances. It is for us too soon to modify these limits, nevertheless we agree it is a valid proposal for when the Ecolabeled number of products on the market will be much more important than it is now.	A few data points were provided by a stakeholder for LD calculated with the 2014 DID list and the results confirmed the major trend – the current CDV thresholds are above the CDV values for laundry detergents, at least heavy-duty ones. Concerning the link between performance and CDV, no substantiating data was found by JRC or provided by stakeholders.
		(In response to: " Is the CDV value for fabric softeners sufficient?") Yes	
		CDV-values must be lowered. The DID-list 2014 give chronic values for many ingredients and a recalculation is necessary. A separate value for very concentrated products should be discussed.	

8.10.2 Further research on the assessment of toxicity to aquatic organisms

Detergents have great potential to cause disturbances in aquatic ecosystems as they cause chemical emissions to water during their entire life cycle. For this reason, EU Ecolabel criteria aim at limiting the amount of emissions coming from EU Ecolabel products. Critical Dilution Volume (CDV) is proposed, for the moment, to be kept as the toxicity to aquatic organisms assessment method in EU Ecolabels related to detergents. The use of another ecotoxicity assessment method, more specifically USEtox, was suggested during stakeholder consultation. Following the first results obtained using USEtox in the scope of PEF pilots, the application of USEtox on a large scale, such as for the EU Ecolabel, is not considered feasible. USEtox method could potentially be used in future revisions.

Please consult Section 8 of the 1st draft of the Technical Annexe [4] for a discussion of different methods considered for the assessment of toxicity to aquatic organisms.

8.10.3 General impact of the change to the 2014 DID list

The main issue highlighted by stakeholders is the impacts of the switch from the 2007 DID list to the 2014 DID list on the EU Ecolabel criteria. The final report for the "Revision of the harmonised Detergent Ingredient Database" [19] that was published along with the 2014 DID list highlights some of the differences between the two lists. The 2014 DID list has been extended by some 40 substances, chronic data has been added 30 substances resulting for many of them in lower safety factors, a new degradation factor has been added for very toxic substances that degrade extremely rapidly, along with other updates and corrections. All these changes should result in generally lower CDV values and most recalculation efforts have shown this to be true, with the exception of some hard-surface cleaning products. A limited number of updates to the DID list were seen to have a strong impact on CDV calculations (e.g. DID entries 2123, 2202, 2401, 2411, 2583, 2585) and these impacts could increase or decrease CDV values by more than 200%.

As the JRC does not have access to the formulations of EU Ecolabel products, all the data contained in this report were provided by stakeholders. A section detailing the influence of the switch to the 2014 DID list, where is known, can be found for each product group below.

Overall, three main types of data were considered during the revision – CDV values of detergents currently available on the market (although largely skewed towards ecolabelled products because this type of data is more readily available from competent bodies and testing institutes), stakeholder input and updates to the DID list (that might cause CDV values to be different).

8.10.4 Laundry detergents: CDV threshold updates

Consultation with stakeholders showed that opinions vary on the thresholds that should be set for CDV for laundry detergents. While many call for lower values to the fact that currently all products that have been awarded the EU Ecolabel easily pass this criterion and the 2014 DID list will most likely cause many values to go down, others argued that lowering CDV thresholds would force manufacturers to produce products that are less performing. As the JRC does not have direct access to the exact formulation of products and no substantiating data was provided to back up the latter claim, no claims can be made in this report on the impact of lower CDV thresholds on product performance. Concerning the impacts of changing from the 2007 DID list to the 2014 DID list, the effects are explained below.

The 2014 DID list came into force in late 2014 and, so far, little data is available on the real impact on CDV values. One stakeholder provided a comparison for five products between CDV values for laundry detergents based on the 2007 and 2014 DID lists. For all products a decrease in CDV values was observed, ranging from 10% to over 50%, with an average for 31% (although the average may not be of significant importance due to the fact that only five values were available). As per information provided by the stakeholder, changes made to two DID list entries were the main contributors for multiple products.

Due to lack of data based on the 2014 DID lists, general trends were considered based on the 2007 DID list and the evolution of product formulations. A total of 28 CDV values for laundry detergents were received from stakeholders, all for products having been awarded the EU Ecolabel, no information was received on stain removers. For both powder and liquid products, all were below the current CDV threshold, with liquid products having significantly higher values than powder products (Table 28). Further research highlighted that liquid detergents contain more surfactants per functional unit than powder detergents and, as surfactants

have a high contribution to the CDV of the product, it follows that liquid detergents will have a higher contribution to the CDV than do powder detergents. Nevertheless, due to the relatively small sample size and as no other criterion differentiates the two; it is proposed to propose a single threshold for both liquid and powder detergents.

Table 28. CDV ranges for heavy duty laundry detergents

	CDV (l/kg wash)			Current limit (l/kg wash)
	Min	Max	Average	
Liquid	19 600	31 600	27 000	35 000
Powder	11 000	30 700	20 100	35 000

No data was available for light-duty products and stain removers but the market analysis did not highlight any significant changes in the light-duty detergents market.

Overall, the lowering of the CDV threshold values, at least for heavy-duty products, is substantiated – a 10% decrease to 31 500l/kg wash would result in most products currently awarded with the EU Ecolabel to be under the threshold if the calculations were still being made with the 2007 DID list. With the 2014 DID list, they will, most likely, be significantly under the threshold.

8.10.5 Industrial and institutional laundry detergents: CDV threshold updates

For this product group the CDV calculation is set for different levels of water hardness and degrees of soiling, as well as for different product types (liquid/powder/multi-functional). As outlined in the Reference Dosage (Section 3.4), this product group covers a wide range of potential washing requirements including hotel bed linen, restaurant table cloths and sheets used in hospitals, and the stains encountered are often tougher than on domestic laundry. Moreover, the wash cycles used are shorter. Thus, when compared to consumer laundry detergents, the CDV values for the IILD product group are overall less strict than for the other product group.

As for all product groups, the change from the 2007 to the 2014 DID list should have consequences on CDV values but in the case of I&I laundry detergents no information was found or provided by stakeholders on the full effect of the change. For other product groups, the main trend is that CDV values are lower with the more recent DID list.

For calculations made with the 2007 DID list, CDV values for only four different products were obtained (Table 29). The values obtained were significantly lower than the current limits for all water hardness levels but the lack of data does not allow the revision of the thresholds.

Table 29. CDV ranges found for IILD products

	Soiling	Values	CDV (L/kg laundry)			Current Limit (L/kg laundry) (medium water)
			Min	Max	Average	
I&I Multi-component liquid	Light	3	14,700	32,700	23,600	60,000
	Medium	3	20,700	38,700	29,600	80,000
	Heavy	3	26,100	43,900	35,100	100,000
I&I Heavy duty powder	N/A	1	34,700	34,700	34,700	40,000 (light soilage) 60,000 (medium soilage) 80,000 (medium soilage)

See Section 8.7 for a discussion on water hardness units.

8.10.6 Dishwasher detergents: CDV threshold updates

A main concern for all product groups is the change from the 2007 to the 2014 DID list and the impact on CDV values and in the case of dishwasher detergents, no information was found or provided by stakeholders on the full effect of the change. For other product groups, the main trend is that CDV values are lower with the more recent DID list.

For calculations made with the 2007 DID list, a total of 22 CDV values were received from stakeholders, including 3 values for rinse aids (Table 30), that have applied to be awarded the EU Ecolabel for detergents for dishwashers or other similar ecolabels.

Table 30. CDV ranges for dishwasher detergent product types (rounded to the closest 100)

	No.	CDV (l/wash)		
		Min	Max	Average
Single-function dishwasher detergents	8	6 500	24 700	16 300
Multi-function dishwasher detergents	11	12 800	27 400	19 400
Rinse aid	3	4 530	5 800	5 300

While the data sets are limited, it can be observed that the average CDV values recorded are considerably lower than the current CDV limits, although in the case of single function detergents the disparities between values are high (standard deviation of 6 800) and two values are very close to the current limit.

Based on this data and the general trend that calculations made with the 2014 DID list tend to yield lower results, it is proposed to lower the CDV thresholds for detergents by 20% in order to lower potential environmental impacts. For rinse aids, as a stakeholder pointed out, the data set is extremely limited and too few to make a meaningful evaluation, yet the three data points are very clustered and come significantly below the current 10,000 limit, the maximum being 6,000 amongst the well-clustered values. Despite the data point, it is proposed that a lowering to 7,500 is a realistic response to how easily it appears compliance can be achieved.

8.10.7 Industrial and institutional dishwasher detergents: CDV threshold updates

For this product group the CDV calculation is set for different levels of water hardness and for different product types. As there are many different types of machines and many types of applications, the reference dosage is for g or ml/l of washing water, which is different from consumer dishwashers, thus making it difficult to compare CDV thresholds for the two product groups.

As for all product groups, the change from the 2007 to the 2014 DID list should have consequences on CDV values but in the case of I&I dishwasher detergents no information was found or provided by stakeholders on the full effect of the change. For other product groups, the main trend is that CDV values are lower with the more recent DID list.

For calculations made with the 2007 DID list, CDV values for only two different products were obtained (Table 31). The values obtained were significantly lower than the current limits for all water hardness levels. Stakeholders also recommended that the CDV values should be lowered due to the update from the 2007 to 2014 DID list. Thus, two values have been updated – for detergents and multi-component systems in hard water.

Table 31. CDV data gathered for IIDDs

	CDV		
	Soft	**Medium**	**Hard**
IIDD 1	770	2 100	3 300
IIDD 2	2 300	2 300	2 900

See Section 8.7 for a discussion on water hardness units.

8.10.8 Hand dishwashing detergents: CDV threshold updates

For hand dishwashing detergents, CDV data was obtained calculated with the 2014 DID list. When comparing results obtained with the 2007 and 2014 DID list, there was an average decrease of 53% in values (see Table 32), largely due to the formulations using DID entry 2202, for which the factors were updated.

Table 32. Comparison of CDV calculations for HDDs (the same formulations were used, rounded to the closest 100)

	No.	CDV		
		Min	Max	Average
With 2014 DID list	16	500	1500	1000
With 2007 DID list	16	1100	3600	2500

More data (56 formulations) was also gathered for the 2007 DID list, as shown in Table 33.

Table 33. CDV ranges identified for traditional and concentrated hand dishwashing detergents (rounded to the closest 100)

	No.	CDV		
		Min	Max	Average
With 2007 DID list	56	500	3 900	2 400

This shows that the current CDV threshold is much higher than the average CDV for hand dishwashing detergents and it is all the more likely to be so if calculated with the 2014 DID list. Thus it is proposed to lower the CDV threshold value by 40%, down to 2300. This value could be all the more lowered if more CDV data calculated with the 2014 DID list can be provided by stakeholders.

Table 34. CDV ranges for dishwasher detergent product types (rounded to the closest 100)

	No.	**CDV (l/wash)**		
		Min	**Max**	**Average**
Single-function dishwasher detergents	8	6 500	24 700	16 300
Multi-function dishwasher detergents	11	12 800	27 400	19 400
Rinse aid	3	4 530	5 800	5 300

While the data sets are limited, it can be observed that the average CDV values recorded are considerably lower than the current CDV limits, although in the case of single function detergents the disparities between values are high (standard deviation of 6 800) and two values are very close to the current limit.

Based on this data and the general trend that calculations made with the 2014 DID list tend to yield lower results, it is proposed to lower the CDV thresholds for detergents by 20% in order to lower potential environmental impacts. For rinse aids, as a stakeholder pointed out, the data set is extremely limited and too few to make a meaningful evaluation, yet the three data points are very clustered and come significantly below the current 10,000 limit, the maximum being 6,000 amongst the well-clustered values.

Despite the data point, it is proposed that a lowering to 7,500 is a realistic response to how easily it appears compliance can be achieved.

8.10.9 Hard-surface cleaning products: CDV threshold updates

Multiple stakeholders highlighted that undiluted products were often at a disadvantage compared to RTU products because the thresholds in the current criteria are set so that undiluted products must have extremely high dilution rates in order to be able to pass the requirements (for CDV, a minimum dilution rate required is 1:30 or higher when one considers that undiluted products contain extra stabilisers). It is proposed to lower this required dilution rate to 1:10 as undiluted products do lower environmental impacts in terms of transport and packaging even at low dilution rates.

Impacts of 2014 DID list: For hard-surface cleaners, one stakeholder provided data comparing CDV values for the 2007 and 2014 DID lists for multiple products and, unlike for other product groups, no noticeable trend could be seen as some value went up and some went down.

Out of the 27 undiluted all-purpose cleaner products represented, 9 saw their CDV values decrease by around 50%, mainly due to changes in factor values for a single ingredient. 2 products had their CDV values increase by over 60%, also due to changes in factor values for another single ingredient. The rest of the CDV values changed by relatively small amounts. The same trend can be observed for the other types of products included in the scope of the product group, except for toilet cleaners where the CDV values only generally either stayed the same or went down. Most noticeably, for window cleaners, one product saw its CDV value increase by over 250% while the rest of the window cleaners' CDV values decreased by small amounts.

Other stakeholders also provided a number of data points for changes in CDV values – one reported no changes for RTU toilet cleaners, another reported there was a decrease of over 300% for one of their products while another stated that there was such an increase in CDV value for a product that they will have to reformulate it.

In conclusion it still unclear what the main trends are but it should be noted that even with the increased CDV values, most, if not all, the products would meet the current CDV thresholds, thus it is worthwhile looking into whether these should be tightened. As more data is available calculated with the 2007 DID list, the following discussions are done with those results.

Revision of thresholds: A total of 240 CDV values (based on the 2007 DID list) for hard-surface cleaning products were received, all concerning products that have applied to be awarded the EU Ecolabel for all-purpose cleaners and sanitary cleaners or other similar ecolabels, Table 35. These have been split into five different groups as they exist in the current EU, no reliable data on CDV values was found for the two categories proposed to be included in the EU Ecolabel (undiluted window and sanitary cleaners). Toilet cleaners are presented as a separate category to sanitary cleaners, but because many products were labelled simply as 'sanitary cleaners', without further specification, there might still be some products which are toilet cleaners in the sanitary cleaners category. Nevertheless, it can be observed that toilet cleaners have higher CDV values than most sanitary cleaners.

Table 35. CDV ranges identified for different product types (rounded to the closest 100)

	No.	CDV			Current Limit
		Min	Max	Average	
All-purpose purpose cleaners *(RTU)*	4	5 600	50 500	29 200	52 000
All-purpose cleaners *(undiluted)*	120	1 300	18 000*	10 100	18 000
Window cleaners *(RTU)*	40	1 000	4 800	4 000	4 800
Window cleaners *(undiluted)*	n.d.	n.d.	n.d.	n.d.	n.d.
Sanitary cleaners *(RTU)*	71	1 000	79 500	53 400	80 000
Sanitary cleaners *(undiluted)*	n.d.	n.d.	n.d.	n.d.	n.d.
Toilet (WC) cleaners	5	45 700	80 000	65 400	80 000**

N.B. Reliable data for undiluted sanitary cleaners and window cleaners (undiluted) not available
*two values abnormally high values (41 500 and 79 100) have been disregarded in order not to skew results
**limit for sanitary cleaners has been used

When comparing with other ecolabelling schemes that use CDV for aquatic toxicity, it was found that Nordic Swan generally had lower values (but calculated for soft water) while NF Environnement had much higher values.
The following updates are proposed for the CDV thresholds:
All-purpose cleaners – thresholds of 300 000l and 30 000 are proposed, respectively for RTU and undiluted products. This means that the threshold for RTU products is greatly reduced (but should still be passable for the best products) and the threshold for undiluted products is increased, which should open the door to products with lower dilution rates than 1:30.
Window cleaners – no change is proposed to the threshold for RTU products as it is already quite demanding. A 1:10 ratio is proposed to calculate the threshold for undiluted products, as described above.
Sanitary cleaners – it is proposed to lower the threshold for RTU products as it has been pointed out that even some undiluted products are able to pass it. The threshold of 700 000l should still be passable for multiple products and a ratio of 1:10 is proposed to calculate the threshold for undiluted products.

Toilet cleaners – the option of adding a specific section for toilet cleaners was considered as their CDV values were almost always grouped toward the higher end of sanitary cleaner CDV values. Nevertheless no clear differences could be found to justify the creation of a specific threshold for these types of products.

8.11 Biodegradability

Common text template – BIODEGRADABILITY

(a) Biodegradability of surfactants

All surfactants shall be readily degradable (aerobically).

All surfactants classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable.

(b) Biodegradability of organic compounds

The content of organic substances in the product that are aerobically non-biodegradable (not readily biodegradable aNBO) or anaerobically non-biodegradable (anNBO) shall not exceed the following limits for a reference dosage:

Product type	aNBO	anNBO

Assessment and verification:

The applicant shall provide documentation for the degradability of surfactants, as well as the calculation of aNBO and anNBO for the product. A spreadsheet for calculating aNBO and anNBO values is available on the EU Ecolabel website.

For both surfactants and aNBO and anNBO values, reference shall be done to the DID list.

For ingoing substances which are not included in the DID list, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided as described in the Appendix x, which is available on the EU Ecolabel website.

In the absence of documentation in accordance with the above requirements, an ingoing substance other than a surfactant may be exempted from the requirement for anaerobic degradability if one of the following three alternatives is fulfilled:

1. Readily degradable and has low adsorption (A < 25 %);
2. Readily degradable and has high desorption (D > 75 %);
3. Readily degradable and non-bioaccumulating.

Testing for adsorption/desorption may be conducted in accordance with OECD guidelines 106.

8.11.1 Feedback from stakeholders following 1st AHWG meeting

Table 36. Stakeholder comments regarding biodegradability

PGs	Criterion areas	Stakeholder comments	IPTS analysis and further research
All	Comments supporting keeping the criterion on biodegradability of surfactants	We are in favour of the criterion that surfactants should also be biodegradable under anaerobic conditions. Waste water treatment plants are not always present and they do not biodegrade everything. We believe the setting of a criterion for the biodegradability of organic substances is relevant. For example polycarboxylates are used.	See discussion of comments in section 8.11.
All		Due to the adsorption capacity of lipophilic surfactants, they tend to end up in the sludge of the sewage treatment plant where they are inaccessible to aerobic degradation mechanisms. If these surfactants are additionally low anaerobic biodegradable, there is a high risk that they will be discharged in agricultural soils.	
All		In line with the environmental excellence of the EU Ecolabel products, BEUC and EEB fully support the restriction of organic substances and mixtures that are aerobically or anaerobically non-biodegradable in all product groups.	
All		BEUC and EEB are pleased with the common approach proposed by the JRC to require aerobic and anaerobic biodegradation of all surfactants and appreciate this significant improvement. Indeed, given the fact that most of the aquatic environment has aerobic conditions but not all of it, and given the number of existing products in the market that contain surfactants that are anaerobically biodegradable, we are convinced that it is highly desirable to require the biodegradability of surfactants under anaerobic conditions as well, which fulfils the EU Ecolabel goals and its underlying precautionary principle.	
All		We support the criterion.	
All		We support that all surfactants shall be biodegradable under anaerobic conditions.	
All		All surfactants shall be biodegradable under anaerobic conditions, also the anionic surfactants.	
All		Norway supports this criterion.	

All		We support that All surfactants shall be biodegradable under anaerobic conditions (non-ionic, cationic and anionic) We support this	
All	Comment supporting changing or removal of the criterion	As reported in § 7.9.1.1 Biodegradability of surfactants (p. 422-423): "... in contrast to the adverse effects observed in the absence of aerobic degradation, the lack of anaerobic degradation does not seem to be correlated with any apparent risk for these environmental compartments". Following this conclusion, it is difficult to understand the position taken to set anaerobic biodegradability as a required criterion for every type of surfactants. Why the detergency related ecolabels are not all harmonized following the example of Industrial and Institutional Laundry Detergents for which an exemption is maintained for anionic and amphoteric surfactants (cf. revised version of § 2.8.5, p. 119)? By the way, for most detergency related ecolabels, the revision proposed involves to demonstrate the anaerobic biodegradability of not only non-ionic and cationic surfactants but also of anionic and amphoteric surfactants. Why such a significant revision? Why the concept of thresholds for non-aerobically biodegradable surfactants is not maintained anymore? Besides, should it be reminded that the last revised version of the DID-list contains very few data on amphoteric surfactants (7 amphoteric over about 300 surfactants listed). Considering the increasing importance of amphoteric surfactants on the detergency market (see attached), is the proposed requirement for anaerobic biodegradability of real relevancy in the context of environmental performance?	
All		There are four issues in the new criteria I like to rephrase to make the criteria more environmental friendly and keep focus on improvements: Issue 4 – Anaerobic biodegradability We like to refer to the several discussions on the complexity EU-Ecolabel criteria we think anaerobic biodegradability can be taken from the list of criteria. Almost a waste water become in an aerobic environment. To get an minor improvement on an already very environmental unfriendly system like septic tanks. And most often the non-biodegradable waste from that tank is still degraded aerobically. By taken of this anaerobic biodegradability criteria the impact to the environment will be negligible. A positive impact will be the a few very good aerobic biodegradable and low toxic surfactants will be useful in EU-Ecolabed products.	
All	Limit values	The good approach to biodegradability for us has to be based on an investment on research, before lowering limits indiscriminately. Ecolabel should invest on	

		research on complex systems and molecules life cycles, especially in the anaerobic biodegradation field. The European regulation 648/2004 limits are made on a solid base data, it would be reasonless to lower those limits on a weaker data base.	
All	Ultimate aerobic biodegradability and ready biodegradability	Confusion between ultimate aerobic biodegradability and ready biodegradability (= ultimate aerobic biodegradability + 10-day time window). Under Regulation (EC) No 648/2004 (Detergent Regulation), only ultimate aerobic biodegradability is required.	**Comment accepted.** Under Detergents Regulation, surfactants are required to meet the criteria for ultimate aerobic biodegradation. In the case of industrial or institutional detergents containing surfactants derogation may be requested under specified in the directive conditions. Ultimate degradation is the degradation of the substance to CO_2, biomass, H_2O and other inorganic substances. The current EU Ecolabels requirements are set for ready degradability.
All	Definition of rapid degradation in CLP Regulation	Regulation (EC) No 1272/2008 has been amended by Commission Regulation (EU) No 286/2011 of 10 March 2011 (see below); Section 7.9.1.3 shall be amended accordingly. "Substances are considered rapidly degradable in the environment if the following criteria hold true: (a) if in 28-day ready biodegradation studies, the following levels of degradation are achieved: (i) tests based on dissolved organic carbon: 70 %; (ii) tests based on oxygen depletion or carbon dioxide generation: 60 % of theoretical maximum; These levels of biodegradation must be achieved within 10 days of the start of degradation, which point is taken as the time when 10 % of the substance has been degraded, unless the substance is identified as an UVCB or as a complex, multi-constituent substance with structurally similar constituents. In this case, and where there is sufficient justification, the 10-day window condition may be waived and the pass level applied at 28 days; or (b) if, in those cases where only BOD and COD data are available, when the ratio of BOD5/COD is ≥ 0,5; or (c) if other convincing scientific evidence is available to demonstrate that the substance can be degraded (biotically and/or abiotically) in the aquatic environment to a level > 70 % within a 28-day period."	**Comment accepted.** Respective changes were introduced.
All	Reference to mixtures	Degradability, adsorption/desorption and bioaccumulation are not relevant concepts for mixtures; they are meaningful only for single substances.	In the definitions sections the word mixture was removed from phrasing “ingoing substances and mixtures” and the criteria ware

			revised accordingly.

8.11.2 Summary of feedback and further evidence

The technical analysis conducted showed that the choice of ingredients and related impacts, particularly on the aquatic environment, are of high importance for detergent product groups as after the use the product is discharged to the aquatic environment (ideally after going through a wastewater treatment process). Chemicals that degrade rapidly can be quickly removed from the environment, while in the absence of fast degradation a substance present in the aquatic environment has the potential to exert toxicity. Due to this fact, Ecolabelling schemes set requirements regarding degradability of ingredients.

During the 1st AHWG and the subsequent consultation issues of anaerobic biodegradability generated polarised views without a resolution to the debate.

One group of stakeholders follows the SCHER opinion that anaerobic biodegradability is a poor predictor of the ultimate fate and impact of materials released into the environment, largely because anaerobic conditions do not persist in the domains where other organisms are exposed to the chemicals, and chemicals are largely aerobically biodegradable.

The other group contests the assertion around exposure under anaerobic conditions, in particular citing the potential fate in Waste Water Treatment Plants (WWTPs) where they may attach to certain lipophilic sludge and thus made inaccessible to removal into an aerobic environment, but may ultimately end up spread on agricultural land.

This is correct. There are however studies which demonstrate that even when there is a high surfactant sludge load, once the sludge becomes aerated, such as in its use for agricultural purposes, it will be degraded rapidly as all surfactants used in detergent products have to comply with the requirement of ultimate biodegradation.

More details on biodegradability in general and on the discussion regarding using anaerobic degradability as a criterion in environmental evaluation can be found in Section 7.9 of the the first Technical Background report [4].

Alternative proposal of the criterion provided by the stakeholders

Following additional consultation with stakeholders a counter-proposal to the revised criterion was received provided by the industry association. This proposal corresponds to what JRC has raised also during the EUEB meeting in April, i.e. possibility of linking the requirement of anaerobic biodegradability with the hazardous profile of surfactants, and consequently, potential environmental impacts.

The initial proposal prepared for the 1st AHWG meeting requested that:

- "All surfactants shall be biodegradable under aerobic conditions. All (non-ionic and cationic) surfactants shall be biodegradable under anaerobic conditions."
- Additionally, in the existing EU Ecolabel decision in the criterion on "Hazardous substances and mixtures" it is stated that surfactants can be derogated for H400, H411 and H412 under the provision that they are both readily and anaerobically degradable."

The stakeholders association proposed that "*Surfactants classified with H400 and H411 are derogated from the criterion on Excluded and limited substances and mixtures, section b, provided that they are both readily and anaerobically degradable. Surfactants classified with H412 are also derogated from the criterion on Excluded and limited substances and mixtures, section b*"

According to the proposal, surfactants classified with H412 and the non-environmentally classified surfactants would not need to meet the criteria of anaerobic biodegradability. The more severely classified surfactants would however have to fulfil the additional requirement of anaerobic biodegradability. There is also an additional restriction regarding allowed levels of various surfactants used due to the impact they have on the environmental classification of the final product - the final product shall not be classified.

DID list and anaerobically degradable surfactants

Information contained in the DID list regarding anaerobic biodegradability of surfactants were collected and are presented in Table 37.

Table 37. Information on anaerobic biodegradability of surfactants contained in the DID list 2014

Type of surfactant	Anaerobically biodegradable	Anaerobically non-biodegradable	Not tested	Number of positions listed
Anionic surfactants	10	7	15	32
Non-ionic surfactants	28	1	25	54
Amphoteric surfactants	4	-	3	7
Cationic surfactants	1	-	3	4
Summary	43	8	46	97

It can be seen that out of 97 surfactants included in the DID database 43 are anaerobically biodegradable, 8 are not anaerobically biodegradable and 46 were not tested. Non-anaerobically degradable surfactants are:

- C10-13 linear alkyl benzene sulphonates,
- C14-16 alkyl sulphonate,
- C16-18 aatty acid methyl ester sulphonate,
- C16-18 Fatty acid methyl Ester sulphonate,
- C14-16 alfa olefin sulphonate,
- C14-18 alfa olefin sulphonate,
- C12-18 alkyl phosphate esters,
- C8-12 alkyl polyglycoside, branched.

Anaerobic biodegradability and LAS

One of the points of critic of using the anaerobic degradability as a pas-fail criterion refers to the consideration that available screening methods do not simulate well the real conditions, which are in such environments. This is mainly due to high substance/biomass ratio, limited possibility of adaptation and possible inhibitory effects [20]. Due to this fact a negative result does not necessarily mean that the substance will not degrade under real conditions.

Stakeholders provided a study conducted at the University of Cadiz [21], which looked at biodegradation under anaerobic conditions of linear alkylbenzene sulfonates (LAS) in marine sediments. The study followed the OECD TG 308 (Aerobic and anaerobic transformation in aquatic sediment systems) guidelines, which allows for analysis of transformation of organic compounds in aquatic environment. The project encompassed among other monitoring of LAS transformation and identification and quantification of LAS degradation metabolites, as well as calculation of LAS half-life.

The study confirmed that LAS degrades under anaerobic conditions, although using the screening methods it would be classified as non-degradable under anaerobic conditions. The study conducted will undergo peer-review and will soon be publically available.

Proposal for the harmonised criterion

In the current criteria in the derogation section it is required that surfactants classified as aquatic chronic toxic, i.e. H411 and H412 shall be derogated provided that they are ready degradable and anaerobically degradable. The derogation for H411 applies in the currently valid criteria to hand dishwashing detergents only. It is expected that the approach in which only H411 classified surfactants are requested to be anaerobically biodegradable will not gain stakeholders support, as expressed in their comments. It is proposed to link the requirement on anaerobic biodegradability to surfactants classified as hazardous to aquatic environment.

Additionally, it is proposed to keep the restriction on the content of aerobically and anaerobically degradable organics. More details on how it is dealt for single product groups can be found in respective sections for these product groups. The common text proposal is given in the end of this section.

Assessment of biodegradability

Several OECD screening tests (OECD 301A-F, 302, 304, 306 and 310) and simulation tests (OEDE 303, 307, 308 and 309) are available for assessment of aerobic biodegradability of organic compounds. Potential biodegradability of organic compounds under anoxic conditions can be assessed in a screening test for anaerobic biodegradability (OECD 311) [22].

After December 2015, the ready biodegradability tests set out by the CLP Regulation (amended by Commission Regulation (EU) No 286/2011 of 10 March 2011) shall be used in the scope of EU Ecolabels. This Regulation specifies that *'substances are considered rapidly degradable in the environment if one of the following criteria hold true:*

(a) if in 28-day ready biodegradation studies, the following levels of degradation are achieved:

(i) tests based on dissolved organic carbon: 70 %;

(ii) tests based on oxygen depletion or carbon dioxide generation: 60 % of theoretical maximum;

These levels of biodegradation must be achieved within 10 days of the start of degradation, which point is taken as the time when 10 % of the substance has been degraded, unless the substance is identified as an UVCB or as a complex, multi-constituent substance with structurally similar constituents. In this case, and where there is sufficient justification, the 10-day window condition may be waived and the pass level applied at 28 days; or

(b) if, in those cases where only BOD and COD data are available, when the ratio of BOD5/COD is ≥ 0,5; or

(c) if other convincing scientific evidence is available to demonstrate that the substance can be degraded (biotically and/or abiotically) in the aquatic environment to a level > 70 % within a 28-day period."

For anaerobic biodegradability, EN ISO 11734 norm or equivalent shall be used in the scope of EU Ecolabels.

More information on the documentation which needs to be provided to prove compliance with requirements on biodegradability is given in the below text, which in the current criteria is included as Appensix in the legal criteria text. It is proposed in the revised criteria to have this annex uploaded at the EU Ecolabel website, in order to be able to update it in a more flexible way, shall the development in the area of texting for anaerobic degoratadion take place.

Appendix (to be placed on the EU Ecolabel website)

Documentation of ready biodegradability

The test methods provided for in Commission Regulation (EU) No 286/2011 for rapidly biodegradability shall be used.

Documentation of anaerobic biodegradability

The reference test for anaerobic degradability shall be EN ISO 11734, ECETOC No 28 (June 1988), OECD 311 or an equivalent test method, with the requirement of 60% ultimate degradability under anaerobic conditions. Test methods simulating the conditions in a relevant anaerobic environment may also be used to document that 60% ultimate degradability has been attained under anaerobic conditions.

Extrapolation for substances not listed in the DID-list

Where the ingoing substances are not listed in the DID-list, the following approach may be used to provide the necessary documentation of anaerobic biodegradability:

1) Apply reasonable extrapolation. Use test results obtained with one raw material to extrapolate the ultimate anaerobic degradability of structurally related surfactants. Where anaerobic biodegradability has been confirmed for a surfactant (or a group of homologues) according to the DID-list, it can be assumed that a similar type of surfactant is also anaerobically biodegradable (e.g., C12-15 A 1-3 EO sulphate [DID No 8] is anaerobically biodegradable, and a similar anaerobic biodegradability may also be assumed for C12-15 A 6 EO sulphate). Where anaerobic biodegradability has been confirmed for a surfactant by use of an appropriate test method, it can be assumed that a similar type of surfactant is also anaerobically biodegradable (e.g., literature data confirming the anaerobic biodegradability of surfactants belonging to the group alkyl ester ammonium salts may be used as documentation for a similar anaerobic biodegradability of other quaternary ammonium salts containing ester-linkages in the alkyl chain(s)).
2) Perform screening test for anaerobic degradability. If new testing is necessary, perform a screening test by use of EN ISO 11734, ECETOC No 28 (June 1988), OECD 311 or an equivalent method.

Perform low-dosage degradability test. If new testing is necessary, and in the case of experimental problems in the screening test (e.g. inhibition due to toxicity of test substance), repeat testing by using a low dosage of surfactant and monitor degradation by 14C measurements or chemical analyses. Testing at low dosages may be performed by use of OECD 308 (August 2000) or an equivalent method.

8.11.3 Laundry detergents: biodegradability

In the currently valid criteria no requirement on biodegradability of surfactants is set. Requirements only address aerobic and anaerobic biodegradability of organic compounds.

In order to assess the need of changing the limits on biodegradability of organic compounds, data on aNBO and anNBO of the existing EU Ecolabel products were collected from the Competent Bodies and from licence holders. In total, information for 27 powder products (all heavy-duty detergents), 41 liquid products (just four light-duty detergents) and 2 stain removers were provided. This information was provided by seven different Competent Bodies (see Table 38 and Table 39 for ranges).

Table 38. aNBO ranges for laundry detergents

	aNBO (g/kg wash)			Current limit (g/kg wash)	Proposed limit (g/kg wash)
	Min	Max	Average		
Powder, heavy-duty	0,19	1,03	0,59	1,0	1,0
Liquid, heavy-duty	0,00	0,55	0,16	0,55	0,55
NB: Comprehensive data for light-duty and stain removers not available					

Table 39. anNBO ranges for laundry detergents

	aNBO (g/kg wash)			Current limit (g/kg wash)	Proposed limit (g/kg wash)
	Min	Max	Average		
Powder, heavy-duty	0,22	1,29	0,78	1,3	1,3
Liquid, heavy-duty	0,00	0,56	0,19	0,7	0,6
NB: Comprehensive data for light-duty and stain removers not available					

Based on the information obtained it is proposed to keep the current values for powder and liquid heavy-duty detergents, with the exception of anNBO value for liquid ones, which is proposed to be lowered to 0,6 g/kg wash.

In the case of liquid light duty products values for only two products were provided, amounting max 0,21 for aNBO and 0,23 for anNBO. This is below the limit for this kind of products (0,30 g/kg wash), however lack of additional data does not allow for proper analysis and it is proposed to keep the current limit.

For stain removers values for one product only were provided. For both aNBO and anNBO they amounted 0,01 g/kg, which is equal to the limit value. It is thus not proposed to lower this limit.

Regarding the requirement on surfactants, it is proposed to require that all shall be readily degradable (aerobically) and the classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable. For more information see Section 8.11.2.

8.11.4 Industrial and institutional laundry detergents: biodegradability

IILD is (together with IIDD) the youngest product group in the basket of detergent and cleaning products. There are so far hardly any applications for the IILD EU Ecolabel. Values just for one multi-component product used with soft water were received. They were significantly lower than the current limits. Nevertheless, due to lack of other data, no meaningful analysis of the strictness level of the current criterion could be conducted. Lack of applications, according to explanations received from several stakeholders, is linked to the missing derogation for bleaching agents.

It is proposed to keep the current limit values for organic compounds as suggested also by some stakeholder, who stated that the criteria are valid for too short period yet and not many companies had the chance to apply for EU Ecolabel for I&I products.

Regarding the requirement on surfactants, it is proposed to require that all shall be readily degradable (aerobically) and the classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable. For more information see Section 8.11.2.

8.11.5 Dishwasher detergents: biodegradability

Data on aNBO and anNBO for organic compounds of the existing EU Ecolabel products were collected from the Competent Bodies and from licence holders. In total, information for 43 dishwashing products (mostly tablets) was received. This information was provided by seven different CBs. Very high variability of results could be observed (ranges are given in below table).

Table 40. aNBO and anNBO ranges for dishwasher detergents

	aNBO(g/wash)			Current limit (g/wash)	Proposed limit(g/ wash)
	Min	**Max**	**Average**		
Dishwasher detergent	0,00	1,01	0,61	1,0	1,0
	anNBO(g/wash)				
	0,00	3,65	1,47	5,5	3,0
NB: Comprehensive data for rinse aid not available					

Based on the analysis of the data provided it is proposed to keep the value of aNBO and the current level and to lower the value of anNBO to 3,0 g/wash. 23 out of 43 values provided for laundry detergents for anNBO ranged between 1 and 2 g/wash, 10 ranged between 2 and 3 g/wash and just 1 exceeded 3 g/wash.

Regarding rinse-aids information for three products only was provided which does not allow for any meaning analysis. It is proposed to keep the current values.

Regarding the requirement on surfactants, it is proposed to require that all shall be readily degradable (aerobically) and the classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable. For more information see Section 8.11.2.

Stakeholders are asked for their comments on the proposed lower anNBO fo dishwasher detergents, supported by technical data.

8.11.6 Indiustrial and institutional dishwasher detergents: biodegradability

IIDD is a relatively new product group and so not too many applications were submitted for products to be awarded with EU Ecolabel. Values for aNBO and anNBO for 153 I&I dishwashing products and 7 rinse aids were provided to the project team by three CB. According to the information 4 dishwasher detergents and 4 rinse aid products did not contain any organic compounds which were either aerobically or anaerobically non-degradable.

Ranges and averages (which should be seen with care as the number of products analysed was very low) are given in below table.

Table 41. aNBO and anNBO ranges for I&I dishwasher detergents

Industrial and institutional dishwasher detergents		**Organics (soft water)**		**Organics (medium water)**		**Organics (hard water)**	
		g/l washing solution		**g/l washing solution**		**g/l washing solution**	
Kind		aNBO	anNBO	aNBO	anNBO	aNBO	anNBO
Dishwasher detergent/Multicomponent system	Current	0,4	0,6	0,4	1,0	0,4	1,5
	Min	0,0	0,0	0,0	0,0	0,0	0,0
	Max	0,12	0,59	0,34	0,74	0,2	0,81
	Average	0,04	0,17	0,09	0,27	0,11	0,27
Rinse aid	Current	0,04	0,04	0,04	0,04	0,04	0,04
	Min	0,0	0,0	0,0	0,0	0,0	0,0
	Max	0,02	0,02	0,03	0,02	0,02	0,02
	Average	-	-	-	-	-	-

As this is the only information received and due to the short time of the criteria functioning, no changes are proposed to the current values for organic compounds, with the exception of anNBO value for hard water where the limit can be lowered to 1 g/l of washing solution. In the occasion of next revision, when the criteria will be in force for longer time a more comprehensive analysis should be possible.

Regarding the requirement on surfactants, it is proposed to require that all shall be readily degradable (aerobically) and the classified as hazardous to aquatic environment shall be in addition anaerobically biodegradable. For more information see Section 8.11.2.

8.11.7 Hand dishwashing detergents: biodegradability

In the currently valid criteria it is required that surfactants are readily biodegradable. In addition, surfactants which are not biodegradable under anaerobic conditions may be used in the product provided that the surfactants are not classified with H400 (Very toxic to aquatic life) within the limit specified below at concentration greater than 0,20 gram of the recommended dose expressed for 1 litre of dishwashing water.

According to the data provided by the CBs to the project team for 104 hand dishwashing detergents awarded with EU Ecolabel (10 out of them are intended for professional users only and 3 are both consumer and professional products) only 17 products contained very small amounts of surfactants which are not anaerobic biodegradable in the concentration of max 0,13g/l of dishwashing water or below. This is significantly below the limit values se currently in the criterion.

Nevertheless, as agreed along the criteria revision process a harmonisation of criteria for all cleaning products and detergents product groups is sought. It is proposed to have a restriction on surfactants which are hazardous to the environment and to set maximum content of aerobically and anaerobically non-degradable organic compounds.

So far it was not required to collect information on aNBO and anNBO values for HDD and APC products. All licence holders were contacted in order to collect information on the content of organic compounds in the product. Information for 15 products has been received. Based on the information provided the max xontent on aNBO and anNBO for hand dishwashing detergents amounted: 0.03 and 0.04 g/dosage recommended by the manufacturer for 1 litre of dishwashing water. Based on the very limited information provided and taking into account the values of anNBO for surfactants achieved by the currently labelled products the following thresholds are proposed for discussion:

Product type	aNBO	anNBO
Hand dishwashing detergents	0.05 g/dosage recommended by the manufacturer for 1 litre of dishwashing water	0.15 g/dosage recommended by the manufacturer for 1 litre of dishwashing water

Stakeholders are kindly requested for feedback on the proposed limit values.

8.11.8 Hard-Surface Cleaning Products: biodegradability

In the current criteria for APC only a requirement on biodegradability of surfactants is set. It is required that each surfactant used shall be readily biodegradable. In addition, surfactants that are not biodegradable under anaerobic conditions may be used in the product within specified limitations provided that the surfactants are not classified with H400 (Very toxic to aquatic life), as indicated below:

Table 42. Current requirements on anNBO of surfactants for APCs

Product	Weight of anaerobic-ally non-bio-degradable surfactants
Diluted all-purpose cleaner	<0,40 g/l of water
Undiluted all-purpose cleaner	<4,0 g/100 g of product
Sanitary cleaner	<2,0 g/100 g of product
Window cleaner	<2,0 g/100 g of product

Data have been collected from the CB on the existing products. According to the information received:

- out of 40 window cleaners only two contained anaerobically non-degradable surfactants in amount of 0,03 g/100 g of product and 1,6 g/100 g of product,

- out of 49 toilet cleaners only two contained anaerobically non-degradable surfactants in amount of 1.44 and 0,07 g/100 g of product,
- out of more than 120 ready to use all-purpose cleaners 24 contained anaerobically non-degradable surfactants in max amount of 0,38 g/100 g of product or below,
- Out of 64 bathroom cleaners only 8 contained anaerobically non-degradable surfactants in amount of max 1,965 g/100 g of product or below,
- all 19 kitchen cleaners contained surfactants which are aerobically degradable.

In order to harmonise the approach on biodegradability across all product groups maximum values for aNBO and annNBO content of organic compounds needs to be established, similarly like for HDD product group.

The Nordic Swan sets the following requirements regarding the content of organic compounds which are non-degradable under aerobic and anaerobic conditions:

> *The product's total content of aerobic (aNBO) and/or anaerobic (annNBO) non-biodegradable organic materials must not exceed the limits stated below per litre of in-use solution. aNBO and annNBO values are calculated for all organic substances in the detergent.*

Table 43. Nordic Swan requirements on biodegradability of organic compounds

Product	**aNBO** (g/l in-use solution)	**annNBO** (g/l in-use solution)
Concentrated, consumer	0,100	0,100
RTU WC, consumer	2,10	6,00
RTU other, consumer	2,00	2,00
RTU window, consumer and professional	2,00	2,00
Concentrated, professional	0,045	0,250
RTU WC, professional	2,25	30,0
RTU, professional	0,70	0,70

One possibility is to harmonise with the Nordic Swan criterion, there are however some differences. For both ready to use and concentrated products the Nordic Swan refers to grams of non-degradable organic compounds contained in 1 litre of in-use solution. In the EU Ecolabel for ready to use products 100g is used as the reference.

In addition, product categories in the Nordic Swan do not always correspond directly to those found in the EU Ecolabel. The closest EU Ecolabel equivalent product category has been indicated in below table.

Table 44. Nordic Swan and EU Ecolabel product group equivalents

Product in Nordic Swan	**Equivalent in EU Ecolabel**
Concentrated, consumer	All-purpose cleaner (undiluted)
RTU WC, consumer	Toilet (WC) cleaner
RTU other, consumer	All-purpose cleaner (RTU)
RTU window, consumer and professional	Window cleaner (RTU)
Concentrated, professional	All-purpose cleaner (undiluted)
RTU WC, professional	Toilet (WC) cleaner
RTU, professional	All-purpose cleaner (RTU)

Based on the limit values in the Nordic Swan it is not easy to propose thresholds for the cleaning products in the EU Ecolabel. As there are many products which were awarded with EU Ecolabel manufacturers, similarly like for HDD, were contacted in order to consult potential limit values for organic compounds in cleaning products. The following information was provided (calcualated for existing products):

Table 45. aNBO ranges identified for different product types

	No.	CDV		
		Min	**Max**	**Average**
All-purpose purpose cleaners *(RTU)*	15	0,08	0,14	0,13
All-purpose cleaners *(undiluted)*	20	0,0	0,05	0,02
Window cleaners *(RTU)*	6	0,002	0,10	0,02
Window cleaners *(undiluted)*				
Sanitary cleaners *(RTU)*	9	0,0	0,36	0,11
Sanitary cleaners *(undiluted)*	2	0,15	0,5	-
Toilet (WC) cleaners	8	0,08	0,30	0,12

N.B. Reliable data for undiluted sanitary cleaners and window cleaners (undiluted) not available

Table 46. anNBO ranges identified for different product types

	No.	CDV		
		Min	**Max**	**Average**
All-purpose purpose cleaners *(RTU)*	15	0,10	1,64	0,28
All-purpose cleaners *(undiluted)*	20	0,0	0,58	0,13
Window cleaners *(RTU)*	6	0,005	3,51	1,19
Window cleaners *(undiluted)*				
Sanitary cleaners *(RTU)*	9	0,001	3,03	1,39
Sanitary cleaners *(undiluted)*	2	0,33	1,85	-
Toilet (WC) cleaners	8	0,40	3,14	1,97

N.B. Reliable data for undiluted sanitary cleaners and window cleaners (undiluted) not available

Values for this criterion will be proposed for discussion during the 2nd AHWG meeting as the consultation is still ongoing.

8.12 Excluded and restricted substances

For each product group LCA studies performed as part of the technical analysis (for details see Section 4 of the respective Preliminary Reports, e.g. [7]) have shown that chemicals used for the manufacturing of detergent products significantly contribute to the overall environmental impact.

Limiting the amount of environmentally harmful substances contained in detergents is essential as after use they are released to the aquatic environment. Although detergent wastewater generally go through sewage treatment systems (data are provided in section 8.16.2), in the worst case scenario, ingredients may be released directly into the aquatic environment. The Detergent Directive does not prohibit the use of substances in detergent products on the basis of their environmental properties, but the EU Ecolabel Regulation sets out general requirements for substances:

> *"The EU Ecolabel may not be awarded to goods containing substances or preparations/mixtures meeting the criteria for classification as toxic, hazardous to the environment, carcinogenic, mutagenic or toxic for reproduction (CMR), in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, nor to goods containing substances referred to in Article 57 of Regulation (EC) No 1907/2006 of the European parliament and the Council of 18 December 2006 concerning the Registration, evaluation, authorization of chemicals (REACH) establishing a European Chemicals Agency".*

The Regulation allows derogations of specific substances under strictly defined conditions:

> *"For specific categories of goods containing substances referred to in paragraph 6, and only in the event that it is not technically feasible to substitute them as such, or via the use of alternative materials or designs, or in the case of products which have a significantly higher overall environment performance compared with other goods of the same category, the Commission may adopt measures to grant derogations from paragraph 6".*
>
> *"No derogation shall be given concerning substances that meet the criteria of Article 57 of Regulation (EC) No 1907/2006 and that are identified according to the procedure described in Article 59(1) of that Regulation, present in mixtures, in an article or in any homogeneous part of a complex article in concentrations higher than 0,1 % (weight by weight)".*

The aim of this criterion is to exclude or limit toxic or harmful substances, thus ensuring that the EU Ecolabel is only awarded to the least environmentally impacting products.

This section covers several issues related to the criterion on substances used in the formulation. It presents the comments which were provided along the consultation process as well as further analysis and rationale for criteria formulation. Product groups' specific information is presented below in separated subsections

The information in this chapter is presented as they appear in the criteria text; i.e.:

1) Sub-criterion (a): Specified excluded and restricted ingoing substances and mixtures
2) Sub-criterion (b): Hazardous substances
3) Derogations from the sub-criterion (b): Hazardous substances
4) Sub-criterion (c): Substances of Very High Concern (SVHCs)
5) Sub-criterion (d): Fragrances
6) Sub-criterion (e): Preservatives
7) Sub-criterion (f): Colouring agents
8) Sub-criterion (g): Enzymes

8.12.1 Sub-criterion (a): Specified excluded and restricted ingoing substances

As requested by the competent bodies and other stakeholders, there will be one harmonised list of substances which are specifically excluded from detergent and cleaning product groups. Additionally, restricted substances are covered under this criterion, which can be based on the function of the chemicals (i.e. fragrance substances subject to the declaration requirement provided in Detergents Regulation) or on the chemical composition (i.e. total content of phosphorus compounds).

Further information on the excluded substances can be found in section 10 of the 1st draft of the Technical Annexe [4]. Specific information for phosphorus content can be found in 8.16.

8.12.1.1 Common text proposal for the sub-criterion on specified excluded and restricted substances

Common text template – SPECIFIED EXCLUDED AND RESTRICTRED SUBSTANCES

(i) Excluded substances

Substances indicated in Table 47 shall not be included in the product formulation:

Table 47. List of substances excluded from detergents and cleaning products regardless of concentration

Table 48. List of substances excluded from detergents and cleaning products regardless of concentration, excluding I&I Dishwasher Detergents
Table 49. List of substances excluded from I&I Dishwasher Detergents regardless of concentration

(ii) Restricted substances

Substances listed below shall not be included in the product formulation above the specified mass concentration:

- *[Different requirements depending on the product group, see criteria for single product groups]*

- Fragrance substances subject to the declaration requirement provided in Detergents Regulation (EC) No 684/2004 shall not be present in quantities ≥ 0,010 % (≥ 100 ppm) per substance

Assessment and verification:
The applicant shall provide:
- a signed declaration of compliance supported by declarations from suppliers, if appropriate, confirming that the listed substances have not been included in the product formulation, either regardless of mass concentration (substances listed in (i)) or above specified concentration (substances listed in (ii)),
- for phosphorus: a) information on the complexing agent in the product (detail information of the type of phosphorus-containig substances added as ingredients), b) calculation of the product's total P-content.

Due to differences in between requirements, two versions of the table mentioned above are used in the criteria sets:

Table 48. List of substances excluded from detergents and cleaning products regardless of concentration, excluding I&I Dishwasher Detergents

- APEO and ADP
- Atranol
- Chloroatranol
- Diazolinidylurea
- DTPA
- EDTA
- Formaldehyde
- Hydroxyisohexyl 3-cyclohexene carboxaldehyde (HICC)
- Microplastics
- Nanosilver
- Nitromusks and polycyclic musks
- Phosphates
- Per-fluorinated alkylates
- Quaternary ammonium salts not readily biodegradable
- Reactive chlorine compounds
- Sodium hydroxyl methyl glycinate
- Triclosan
- 5-bromo-5-nitro-1,3-dioxane
- 2-bromo-2-nitropropane-1,3-diol

Only for Hard-Surface Cleaning Products:

- Aromatic solvents
- Halogenated solvents

Table 49. List of substances excluded from I&I Dishwasher Detergents regardless of concentration

- APEO and ADP
- Diazolinidylurea
- DTPA
- EDTA
- Formaldehyde
- Fragrances
- Microplastics
- Nanosilver
- Per-fluorinated alkylates
- Quaternary ammonium salts not readily biodegradable
- Reactive chlorine compounds
- Sodium hydroxyl methyl glycinate
- Triclosan
- 5-bromo-5-nitro-1,3-dioxane
- 2-bromo-2-nitropropane-1,3-diol

8.12.2 Feedback from stakeholders following 1st AHWG meeting

Table 50. Stakeholder comments regarding specified excluded and restricted ingoing substances

PGs	Comment area	Stakeholder comments	IPTS analysis and further research
All	Exclusion of specific substances	Part A) During the AHWG meeting I understood that substances that are listed in criterion 3 part A could not be used at any concentration. But in the current criteria is written as a general information "all intentionally added substances of which the concentration in the final product is higher than 0,01% have to comply with the criteria except criterion 1 is valid at any concentration. This confused me. What is the intention of part A? To forbid them at any concentration or all substance above 0,010% in the final function? Including when they are present as an impurity? This should be very clear.	**Comment acknowledged.** The criterion as it was written indeed could be interpreted that all ingredients present above 0,010% w/w, with exception of fragrances, preservatives and colouring agents to which no minimum concentration limit is applied. In order to clearly indicate which substances are excluded regardless of the concentration a modification is introduced in the wording.
All		Some of the substances mentioned under "a" (The product shall not be formulated or manufactured using any of the following compounds) are already excluded by "b" (Table 31- Hazard statements) due to their harmonized classification and labelling. So for instance Formaldehyde receives a classification according to Annex VI CLP as follows: H301, H311, H314, H317, H331, H341, H350. The H-Statements H301, H311, H331, H341 and H350 are already excluded by "b". The same is the case with 2-bromo-2-nitropropane-1,3-diol which receives a harmonized classification as follows: H302, H312, H315, H318, H335, H400. The H-statement is already excluded by "b". It is therefore proposed to delete substances from list "a" which already fulfil excluding H-statements from "b" due to their harmonized classification.	**Comment partially accepted** This is correct. Nevertheless, as indicated above some substances are excluded regardless of the concentration or above 0.010% w/w.
All	Harmonised list of excluded substances	BEUC and EEB support the JRC proposal to extend the exclusion list of harmful substances and mixtures. However, we would like to highlight some inconsistency in the prohibition of hazardous substances. Certain substances are banned in some product category but not in others. We fully support an ambitious, harmonized approach regarding the exclusion of harmful substances.	**Comment accepted.** Requested also by several Competent Bodies in order to simplify the process of applications when the same applicant applies for several different products.
All		In general, suggesting homogenize for all applications and all product groups the sub-criterion: Specified excluded ingoing substances and mixtures. We don't find very logical, for example: for using the 2-bromo-2-nitropropane-1,3-diol (widely used as preservative) in IILD, LD or cosmetic products and it can't be used in HDD. It is true that there are substances that are specific for certain products groups but it doesn't mean that they can't be excluded also in the decisions of other groups. Therefore, also suggesting homogenize for all applications and all product groups all derogations.	**Comment accepted.** A common list is proposed in the revised criterion.

All		We highly welcome that the criteria of the single detergent product groups shall be harmonised as much as possible. A variety of differences in the criteria are the result of individual discussions where different stakeholders took part and/or different times when the decisions have been established but not because of scientific evidence. Therefore it is wise to undertake a common revision of the whole detergent group. This will ease the work of the competent bodies and the producers who apply for the EU Ecolabel. One aim should be that there is a common list of "Excluded or limited substances and mixtures" as manufacturers of raw materials have to check and fill in declarations on each raw material used in the products to be awarded. If there is a need for differences in the excluded or limited substances we have to think about an easy way to declare this but should keep a general declaration sheet for practical purposes.	**Comment accepted.** See above.
All	General hazard phrases list	We ask to delete H304 (May be fatal if swallowed and enters airways) from the list of excluded hazards. This hazard phrase was introduced as a lot of accidents children swallowing oils for fragrance lamps occurred. There is no danger in our point of view that the cleaning agents are swallowed and in that seldom case other ingredients might even be much more dangerous. Especially for solid products it cannot be argued why this classification of one ingredient shall not be allowed. Classification of the mixture is obliged in the following case From CLP: "3.10.3.3.1.1. A mixture which contains a total of 10 % or more of a substance or substances classified in Category 1, and has a kinematic viscosity of 20,5 mm 2 /s or less, measured at 40° C, shall be classified in Category 1." The classification depends on the kinematic viscosity of the mixture which can only be measured or predicted depending on all other components. So, if at all a criterion shall be introduced for this classification, only the classification of the mixture makes sense.	**Comment accepted.** The list of H statements is agreed for all EU Ecolabel product groups horizontally and it is proposed to keep the same list consistently across all product groups.

8.12.3 Further information on excluded substances

Several stakeholders including competent bodies, which conduct the verification process, asked for greater harmonisation across the exclusions for different product groups. Therefore, a revised criteria text contains a harmonised list of excluded substances. It is however understood that some of the substances are more or less relevant for single product groups.

Besides the general comments on the sub-criterion (a), feedback was also provided on some specific ingredients to be included or removed from the common list. It referred to:

- microplastics,
- endocrine disruptors,
- nanomaterials,
- APEOs,
- Perborates.

All other substances, to which no comments or additional information was provided are described in:

- Section 7.10.1 of the 1st draft of Technical Annexe [4] for diazolinidylurea, DTPA, EDTA, formaldehyde, nitromusks and plycyclic musks, quaternary ammonium salts not readily biodegradable, reactive chlorine compounds, 5-bromo-5-nitro-1,3-dioxane (BND), 2-bromo-2-nitropropane-1,3-diol (Bronopol), Sodium hydroxyl methyl glycinate, perfluorinated and polyfluorinated alkylated substances, triclosan and nanosilver.
- Section 7.10.4 of the 1st draft of Technical Annexe [4] for fragrances, and in particular atranol, chloroatranol and hydroxyisohexyl 3-cyclohexene carboxaldehyde (HICC).

8.12.3.1 Microplastics

Stakeholders discussed on the exclusion of microplastics used as abrasives from EU Ecolabel detergent and cleaning products. There was a general agreement that this should be introduced. The issue of the definition was however not clear, as there is no single agreed definition of size of those ingredients.

Table 51. Stakeholder comments regarding microplastics

PGs	Stakeholder comments	IPTS analysis and further research
All	Austria strongly asks to exclude microplastic particles.	**Comment accepted.** Microplastics used as abrasives in detergent and cleaning products are proposed to be excluded.

According to a review [23] "*Microplastics have been attributed with numerous size-ranges, varying from study to study, with diameters of <10 mm* [24], *<5 mm* [25], [26], *2–6 mm* [27], *<2 mm* [28] *and <1 mm* [29], [30], [31]" Blue Angel for hand dishwashing detergents, all-purpose cleaners, sanitary and glass cleaners defines microplastics as plastic particles in size between 100 nm and 5 mm [32]. In the context of EU Ecolabel for cosmetics microplastics were understood as abrasive material below 1mm. It is reasonable to assume, given the similar scrubbing function required for detergents and cleaning products that a similar upper size also applies to microplastics used in those products.

Currently there are various research projects conducted in the area of microplastics. At the EU Environment Council meeting in December 2014, several Member States (Austria, Belgium, the Netherlands, Luxembourg and Sweden) called on for a ban of microplastics added to products. In May 2014 a conference titled "*Eliminating Plastic and Microplastic Pollution - an urgent need*" was held in Brussels. It aimed to connect and facilitate exchange between scientists and institutions involved in research on microplastics [33].

Microplastics originate mainly from secondary sources, as effluents from industrial manufacturing of plastic products, and as fragments of fibre produced by the mechanical action of washing synthetic fibres. Primary route covers arising from the effluents from plastics specifically manufactured for use in this size range (such as abrasives from cosmetics) and ablation media.

In the report "*Overview of EU policies, legislation and initiatives related to marine litter*" [34] it is stated that micro-plastics and fibres from clothes washing might pass the waste water treatment plant. This is confirmed by other studies carried out by NGOs [35], which state that *"micro beads can be found in the effluent of water treatment installations and in some case can reach the marine environment."*

Microplastic debris has been shown to accumulate in the marine environment, constituting direct and indirect hazard to organisms. Browne et al. [36] state that *"ingestion of microplastic provides a potential pathway for the transfer of pollutants, monomers, and plastic-additives to organisms with uncertain consequences for their health."*

There is a strong consensus within the personal products industry that microplastics should be removed from formulations. Unilever announced already in 2012 that it planned to phase out the use of plastic micro beads as a 'scrub' material in all of their personal care products by 2015 [37]. Soon after, Beiersdorf, Colgate-Palmolive and L'Oréal made similar commitments. During 2014 they were joined by Johnson & Johnson, Target Corporation and Crest who targeted removal by end of 2015 or shortly after. Multiple others have issued parallel statements document at the 'Beat The Micro Bead' web site [38]. This process takes place in various regions; also e.g. Nature Cosmetics in South America has announced that it will replace microbeads in their care products with natural ingredients by 2016 [38].

In 2014 the EU Ecolabel for rinse-off cosmetics banned use of abrasives made of microplastics. In relation to detergent products, there is little information available in what scale they are employed, but definitely the extent of their use is lower (also due to price reasons). However, patents are known to have been filed, for example [39] and [40]. The former is in respect of an anionic surfactant-based cleaner incorporating a 'soft plastic' abrasive; and the latter in respect of an acidic cleanser for ceramic surfaces where the microplastics are below 0,5 mm. The fact that one patent ([39]) was allowed to lapse and has expired in 1997 may indicate that the route is not of general interest in general purpose cleaners. The other patent ([40]) remains live.

Though, relying on the precautionary principle, and given the fact that substitutes exist, it is proposed that microplastics are excluded from all EU Ecolabel detergent and cleaning products.

For the moment, for the use of EU Ecolabel, microplastics will be defined as plastic micro beads used as a scrub/abrasive material in detergent and cleaning products. In the frameworks of the works on prevention of marine litter it can be expected that more harmonised definition will be agreed and could be referred to then.

8.12.3.2 Endocrine disruptors

Stakeholders during the 1st AHWG meeting expressed their support to excluded substances classified as endocrine disruptors. However, the Commission is still working on the criteria for classification of these substances. At present impacts assessment is being conducted.

JRC IPTS closely follows this process. Nevertheless, a list of substances classified as endocrine disruptors will not be available in the near future. Until then, and due to the lack of criteria, a general exclusion of those substances be performed, but it is possible to exclude specific chemicals due to their known negative impacts on human health and the environment is possible.

Table 52. Stakeholder comments regarding endocrine disruptors

Stakeholder comments	IPTS analysis and further research
Although the method to define endocrine properties of a substance remains unclear, BEUC and EEB strongly support the exclusion of known endocrine disruptors in EU Ecolabel product as they result in fertility troubles in all organisms including human bodies.	Currently the European Commission is carrying out an impact assessment to analyse different options for defining the criteria for the identification of endocrine disruptors. The process is closely followed by the JRC IPTS.

8.12.3.3 Nanomaterials

Stakeholders during the 1st AHWG meeting expressed their views on nanomaterials. This and further research is reported in the following table

Table 53. Stakeholder comments regarding nano materials

Stakeholder comments	IPTS analysis and further research
EEB and BEUC support the ban of nanomaterials because of the current lack of appropriate methodologies to assess their inherent properties and risks to the environment, consumers and workers. Nanomaterials such as nanosilvers are not yet clearly defined and solutions for a better definition are not sufficiently developed and harmonized. The EU Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) concluded that: "Current risk assessment methodologies require some modification in order to deal with the hazards associated with nanotechnology (…). The Committee points to major gaps in the knowledge necessary for risk assessment. These include nanoparticle characterisation, the detection and measurement of nanoparticles, the dose-response, fate, and persistence of nanoparticles in humans and in the environment, and all aspects of toxicology and environmental toxicology related to nanoparticles." Taking this into account, nanomaterials have to be excluded in the EU Ecolabel based on the precautionary principle and as long as compliance with the general requirements on chemicals cannot be proven.	The agreed position of the Commission services in respect to nanomaterials is that at the time being EU Ecolabel criteria cannot address nanomaterials differently than other chemical substances, as there is no scientific evidence that would justify a different approach. This implies also that nanomaterials cannot be banned as such from EU Ecolabelled products; only specific nanomaterials of concern, like nanosilver, can be banned, if solid scientific evidence supporting the ban is there. In the provisions of the general Assessment and Verification (see Section 8.5) it is required that the the applicant shall list all ingoing substances mentioning (beside the the ingoing quantity and the function of the substance) the ***form of the substance*** as it is present in the final product formulation. In the assessment and verification of the criterion on chemicals is it also requested that a declaration of compliance shall be provided that none of the substances present in the product meets the criteria for classification with one or more of hazard statements ***in the form(s) and physical state(s) they are present in the product***. Thus, the verification process compliance needs to be ensured for the specific form of the substance, for instance the nano-form.
Nanomaterials are being used in cleaning products. Examples can be used in the French nanoregister and this voluntary database. This is not limited to nanosilver. Nanosilicium dioxide, synthetic amorfsilicium dioxide and titanium dioxide are also used. We only want to allow the use of nanomaterials under the following condition. We would only allow the use of nanomaterials and substances at nanoscale in the following conditions independently of the amount produced: All the relevant nanoforms were identified (inter alia form (solid, liquid,…), production method, functionality, localization in the product if still present in the end product/in intermediate products (surface, matrix,…), number size distribution, surface, shape and surface treatment)[1] • Have been submitted to a Chemical Safety Assessment (CSA) equivalent to the CSA performed in REACH, and considering the differences between the various nanoforms of a given substance. If the quantity of the used nanomaterial is below 10T per year, then the data requirements for the CSA will be equivalent to the REACH CSA for 10T per year. • An independent toxicological Committee (like SCCS) approves the use based on the CSA. • The CSA takes into account the nanomaterial's specificities, the latest JRC reports, ECHA and OECD guidance's, and in general the best available techniques and latest data. • This risk assessment include specific exposure scenarios linked with the requested applications for normal use and indirect emissions (scour , ageing, wear off). So that a high level of protection of human health (including workers safety) and the environment along the lifecycle of the product is ensured. The presence of the nanomaterial may not make the recyclability of the product more difficult. All the requested information should always be submitted to the Competent Body. [1] To be specified in the user's manual	

Besides the points mentioned above, one more issue pointed out by experts on chemicals refers to the possibility of labelling nanomaterials in detergent and cleaning products. There is already legislations in force (e.g. for food, cosmetics) which introduces labelling of nanomaterials in certain products. For instance the Cosmetics Regulation 1223/2009 requires that *'All ingredients present in the form of nanomaterials shall be clearly indicated in the list of ingredients. The names of such ingredients shall be followed by the word 'nano' in brackets*. Ít does not ban use of nanomaterials but facilitates transparency towards costomers. The expert advised considering a similar approach for detergent and cleaning products and which is proposed to discuss it during the 2nd AHWG meeting.

8.12.3.4 Alkyl-phenol ethoxylates (APOEs) and alkyl-phenol ethoxylate derivatives (APDs)

Stakeholders queried the necessity of explicitly banning substances such as APEO and APD which are already out of use in common industry practice. The alternatives for detergents and cleaning products are mixtures of anionic and nonionic surfactants (for instance linear alcohol ethoxylates, fatty acids and derivatives, fatty amines or unsaturated hydrocarbons) [41]

Table 54. Stakeholder comments regarding APOEs and APDs

Stakeholder comments	IPTS analysis and further research
Even though APEO is phased out in Europe, we recommend keeping this criterion. We still find small amounts in some ingredients for other product groups, and the producers should be aware of it.	An explicit statement of the ban on APEOs has been added to relevant TRs Section Exclusions.
This is not compulsory as industry does not use APEO or APD anymore due to the non-compliance with detergent regulation	Text explaining the impact of Regulation (EC) No 648/2004 has been added to relevant TRs Section Exclusions.

'The Detergents Regulation' refers in its background to nonylphenol and ethoxylates derivatives, which were at the time of publication undergoing safety review. Some of these substances had been identified as substances of high concern requiring efforts to limit human exposure. Though, their formal exclusion was not within the scope of the Regulation. Industry respondents noted that, according to trade guidelines, such materials had ceased to be used in laundry products. Nevertheless, in accordance with the study prepared for the Danish Environmental Agency [42] some amounts of 2,6-di-tert-butyl-p-cresol and nonylphenol ethoxylates were still used in some cleaning and maintenance products.

It was noted that EU Ecolabel is a voluntary scheme and its implications might therefore not be foremost in the minds of upstream reagent suppliers, where APEO/APD might appear as minor components, by-products or impurities in substances supplied to formulators. Other environmental schemes like the Nordic Swan and the Blue Angel also keep the ban of use of APEOs and derivatives thereof.

In addition only few of these substances have a harmonised classification (see Table 55).

Table 55. Harmonised classification of nonylphenol, actylphenol and thymol

International Chemical Identification	CAS No	Classification	
		Hazard Class and Category Code(s)	Hazard statement Code(s)
nonylphenol; 4-nonylphenol, branched	25154-52-3 84852-15-3	Repr. 2 Acute Tox. 4 * Skin Corr. 1B Aquatic Acute 1 Aquatic Chronic 1	H361fd H302 H314 H400 H410
4-(1,1,3,3-tetramethylbutyl) phenol; 4-*tert*-octylphenol	140-66-9	Irrit. 2 Eye Dam. 1 Aquatic Acute 1 Aquatic Chronic 1	H315 H318 H400 H410
thymol	89-83-8	Acute Tox. 4 * Skin Corr. 1B Aquatic Chronic 2	H302 H314 H411

Accordingly, there was a countering view that the specific exclusion of APEOs and APDs should be retained so that applicants should positively ensure that these substances had not inadvertently been included.

8.12.3.5 Perborates

Stakeholders asked to delete the reference to the perborates from the list of excluded substances indicating that they are not used anymore due to their CMR classification. Further comments are collected in Table 56.

Table 56. Stakeholder comments regarding perborates

Stakeholder comments	IPTS analysis and further research
Perborates are not used due to CMR classification	**Accepted** See below.

Sodium perborate and perboric acid (CAS numbers 15120-21-5; 11138-47-9; 12040-75-1; 7632-04-4; 10332-33-9; 13517-20-9; 37244-98-7 and 10486-00-7) have been classified as toxic to reproduction in category 2 and 3 in 2008 and 2009 when the Commission adopted Directives 2008/58/EC3 and 2009/2/EC4 amending Dangerous Substances Directive 67/548/EEC.

In May 2014 a Member State Committee support document for identification of sodium perborate, perboric acid and sodium salt as a SVHC because of its CMR properties [43]. And in June 2014 they were included on the Candidate List of SVHC for Authorisation. Due to this fact and in accordance with the EU Ecolabel Regulation they cannot be used in EU Ecolabel products, see the sub-criterion (c), and consequently can be removed from the list in sub-criterion (b)

8.12.4 Sub-criterion (b): Hazardous substances

Common text proposal – HAZARDOUS SUBSTANCES

The final product shall not be classified and labelled as being acutely toxic, a specific target organ toxicant, a respiratory or skin sensitiser, carcinogenic, mutagenic or toxic for reproduction, or hazardous to the environment, in accordance with CLP Regulation[a].

The product shall not contain ingoing substances meeting the criteria for classification as toxic, hazardous to the environment, respiratory or skin sensitizers, carcinogenic, mutagenic or toxic for reproduction in accordance with CLP Regulation[a] and as interpreted according to the hazard statements listed in Table 57.

Any ingoing substance present at a concentration above 0,010% w/w in the product shall meet this requirement. Where stricter, the generic or specific concentration limits determined in accordance with Article 10 of CLP Regulation shall prevail to the cut-off limit value of 0,010% w/w.

Table 57. Restricted hazard classifications and their categorisation

Acute toxicity	
Category 1 and 2	**Category 3**
H300 Fatal if swallowed	H301 Toxic if swallowed
H310 Fatal in contact with skin	H311 Toxic in contact with skin
H330 Fatal if inhaled	H331 Toxic if inhaled
H304 May be fatal if swallowed and enters airways	EUH070 Toxic by eye contact
Specific target organ toxicity	
Category 1	**Category 2**
H370 Causes damage to organs	H371 May cause damage to organs
H372 Causes damage to organs through prolonged or repeated exposure	H373 May cause damage to organs through prolonged or repeated exposure
Respiratory and skin sensitisation	
Category 1A	**Category 1B**
H317: May cause allergic skin reaction	H317: May cause allergic skin reaction
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
Carcinogenic, mutagenic or toxic for reproduction	
Category 1A and 1B	**Category 2**
H340 May cause genetic defects	H341 Suspected of causing genetic defects
H350 May cause cancer	H351 Suspected of causing cancer
H350i May cause cancer by inhalation	
H360F May damage fertility	H361f Suspected of damaging fertility
H360D May damage the unborn child	H361d Suspected of damaging the unborn child
H360FD May damage fertility. May damage the unborn child	H361fd Suspected of damaging fertility. Suspected of damaging the unborn child
H360Fd May damage fertility. Suspected of damaging the unborn child	H362 May cause harm to breast fed children
H360Df May damage the unborn child. Suspected of damaging fertility	
Hazardous to the aquatic environment	
Category 1 and 2	**Category 3 and 4**
H400 Very toxic to aquatic life	H412 Harmful to aquatic life with long-lasting effects
H410 Very toxic to aquatic life with long-lasting effects	H413 May cause long-lasting effects to aquatic life
H411 Toxic to aquatic life with long-lasting effects	
Hazardous to the ozone layer	
H420 Hazardous to the ozone layer	

The most recent classification rules adopted by the Union shall take precedence over the listed hazard classifications in accordance with article 15 of CLP Regulation[a]. The hazard statements generally refer to substances. However, if information on substances cannot be obtained, the classification rules for mixtures shall

Common text proposal – HAZARDOUS SUBSTANCES

apply.

Ingoing substances which change their properties upon processing (e.g. become no longer bioavailable or undergo chemical modification) so that the hazards no longer apply and that any unreacted residual content of the hazardous substances is less than 0,010% w/w are exempted from this criterion x(b).

This criterion does not apply to ingoing substances covered by Article 2(7)(b) of the REACH[b] which sets out criteria for exempting substances within Annex V from the registration, downstream user and evaluation requirements. In order to determine if this exclusion applies, the applicant shall screen any ingoing substance present at a concentration above 0,010% w/w.

Ingoing substances included in Table 58 are exempted from the requirement of this criterion.

Table 58. Derogated substances

Substance	Hazard statement
xxxxxx	xxxxx

Assessment and verification:

The applicant shall demonstrate compliance with criterion x(b) for the final product and for any ingoing substance present at concentrations greater than 0,010 % in weight in the final product. A declaration of compliance shall be provided by the applicant supported, where appropriate, by the declarations from their supplier(s) that none of these substances meets the criteria for classification with one or more of hazard statements listed in Table 57 in the form(s) and physical state(s) they are present in the final product. Material safety data sheet for the final product shall also be provided.

The following technical information related to the form(s) and physical state(s) of the ingoing substances as present in the product shall be provided to support the declaration of non-classification:

(i) For substances that have not been registered under REACH and/or which do not yet have a harmonised CLP classification: Information meeting the requirements listed in Annex VII to REACH;

(ii) For substances that have been registered under REACH and which do not meet the requirements for CLP classification: Information based on the REACH registration dossier confirming the non- classified status of the substance;

(iii) For substances that have a harmonised classification or are self-classified: safety data sheets where available. If these are not available or the substance is self-classified then information shall be provided relevant to the substances hazard classification according to Annex II to REACH~~;~~

(iv) In the case of mixtures: safety data sheets where available. If these are not available then calculation of the mixture classification shall be provided according to the rules under CLP Regulation together with information relevant to the mixtures hazard classification according to Annex II to REACH.

For substances listed in Annexes IV and V to REACH, which are exempted from registration obligations under point (a) and (b) of Article 2(7) of REACH, a declaration to this effect by the applicant shall suffice to comply with criterion x(b).

A declaration on the presence of ingoing substances that fulfil the derogation conditions shall be provided by the applicant, supported, where appropriate, by declarations from their supplier(s). Where required for the derogation, the applicant shall confirm the concentrations of these substances in the final product.

[a] Regulation (EC) No 1272/2008

[b] Regulation (EC) No 1907/2006

Hardly any comments were received following 1st AHWG meeting on the general formulation of the criterion on hazardous substances. One question referred to the verification process, which will be discussed in the 2nd AHWG meeting with the Competent Bodies present, to take into account their experience with the existing applications, and to come to a formulation which will be clear to the applicants and the verification bodies.

One more issue, which was left unsolved at the 1st AHWG meeting and the following EUEB meetings refers to the exemption from the scope of the above criterion classification of the final product with H412 and

H413 (which do not require a pictogram on the packaging or the product label) in order to support development of concentrated formulations. Unclear information is received from industry stakeholders regarding this issue. This discussion point will be once again mentioned during the 2nd AHWG meeting (as mentioned below).

Table 59. Stakeholder comments regarding final product classification

PGs		Stakeholder comments	IPTS analysis and further research
All	Final product classification	Surfactants classified as H412 which are readily biodegradable: these are classified on the bases of chronic toxicity-test only. Some new concentrated liquid laundry detergents contain these surfactants in amounts above 25% which means that the product will be classified H412. Do we exclude these products? This must be discussed at the next AHWG-meeting.	**Comment acknowledged.** There was no general agreement whether classification of the final product could be harmful to Ecolabel and should be avoided or whether certain classification could be allowed in order to promote more concentrated products.. A pictogram on the package is not considered helpful for the EU Ecolabel image. Therefor one of the considerations is whether to allow classification which do not carry pictogram at the product label. This topic will be discussed during the 2nd AHWG meeting
		We understand that the allowance of the use of such classified surfactants should not lead to the final product being classified for the environment.	

8.12.5 Derogation requests

8.12.5.1 Surfactants

Table 60. Stakeholder comments regarding surfactants

PGs		Stakeholder comments	IPTS analysis and further research
All	Derogation for surfactants	In terms of the derogations for classified surfactants, we would like to see and harmonisation across all product categories. We think that surfactants classified as H412 should not need to meet the criteria of anaerobic biodegradability and should still be allowed, as long as they are readily biodegradable.	**Comment acknowledged.** A hybrid proposal was received from AISE and is presented below for consideration at the 2nd AHWG meeting.

The current derogations requirements for classified surfactants are summarised in Table 61.

Table 61. Derogation for surfactants classified as H400, H411 and H412

	Decision	Derogation	Classified
DD	2011/263/EU	Surfactants in total concentrations <25% in the final product	H400
LD	2011/264/EU	Surfactants in total concentrations <25% in the final product	H412
HDD	2011/382/EU	Surfactants in total concentrations <25% in the final product	H400
		Surfactants in total concentrations <25% in the final product	H412
		Surfactants in total concentrations <2,5% in the final product	H411
APC	2011/383/EU	Surfactants in total concentrations <25% in the final product	H400
		Surfactants in total concentrations <25% in the final product	H412
IILD	2012/720/EU	Surfactants in total concentrations <15% in the final product	H400
		Surfactants in total concentrations <25% in the final product	H412
IIDD	2012/721/EU	Surfactants in total concentrations <20% in the final product	H400
		Surfactants in total concentrations <25% in the final product	H412

No specific derogation request was provided by the industry. However, the European Committee of Organic Surfactants and their Intermediates (CESIO) provided updated information on the classification of surfactants for aquatic toxicity, following the 2nd ATP (Adaptation to Technical and scientific Progress) to

CLP Regulation. The ATP changed the rules for classification of chronic aquatic toxicity, which affected many surfactants. This comprehensive overview of the classification was however not available when the amendment of the EU Ecolabels for detergent and cleaning products with a derogation for classified surfactants was introduced.

A detailed analysis of classification of surfactants used specifically in EU Ecolabel and non-labelled detergent and cleaning processes is not possible because of the lack of real formulations. Nevertheless, the analysis of the document provided by CESIO confirms that a high number of surfactants are classified with H412 statement, a significantly lower number is classified H411 and even fewer with H410. In certain types of surfactants the classification with H400 is common, e.g. for some amphoteric surfactants such as alkyl dimethyl amines oxides or cationic (quaternary ammonium salts, many of which are also classified with H410) and nonionic (e.g. fatty amine etoxylates, longer-chain fatty alcohol etoxylates).

Due to the very high number of substances that are surfactants and the fact that surfactants used are commonly composed of several substances to enhance the performance of the product it is difficult to have a clear view which of them are with classification. It seems however necessary to keep the current derogations. Also other ecolabelling schemes like the Nordic Swan or Environmental Choice New Zealand allow for use of classified surfactants under certain conditions. In the case of Nordic Swan these surfactants need to be anaerobically degradable. The Environmental Choice requires that they must be readily biodegradable and not potentially bioaccumulative [4].

Moreover, additional information was provided from the industry regarding the derogation of H411 in hand dishwashing detergents. The derogation was introduced at the time when industry predicted chronic classification based on DID list tox values in the light of the 2nd ATP to CLP. In the information sent to the project team it was explained it was needed for betaines, which are very often used in hand dishwashing detergent products and were expected to be classified with H411. In accordance with the current classification most betaines are classified with category 3 aquatic hazard (i.e. H412) and the mentioned derogation is proposed to be withdrawn.

It is proposed to thus to keep the derogation as follows, harmonised for all product groups:

LD / IILD / DD / IIDD / HDD / APC	Surfactants in total concentrations <25% in the final product	H400
	Surfactants in total concentrations <25% in the final product	H412

8.12.5.2 Enzymes and subtilisin

During the 1st AHWG meeting and in the subsequent consultation, respondents were cautiously receptive of the proposal for derogations for enzymes in detergents

Table 62. Stakeholder comments regarding enzymes and subtilistm

PGs	Commented area	Stakeholders comment	IPTS assessment and further research
LD	Derogations	Derogations on surfactants, enzymes and NTA as impurity have to be kept for LD otherwise we will not be able to develop efficient Ecolabel product anymore. We guess that derogations for these categories will be handled by the respective associations (CESIO, etc.)	**Comment acknowledged.** Respective associations were contacted regarding necessary information.
APC	Derogation request for subtilisin	Amfep requests derogation of subtilisin from H400 and H411. The derogation request is attached.	**Comment accepted** Derogation was received for an enzyme subtilisin used currently in laundry and dishwasher detergents. Supporting information provided is summarised and presented below.
LD		Amfep requests derogation of subtilisin from H411. The derogation request is attached. Subtilisin is already derogated from H400 in accordance with Decision 2012/49/EU.	
DD/ LD		Enzyme is already derogated in Detergent for Dishwashers and Laundry Detergent from H400 in accordance with Decision 2012/49/EU.	
All		A.I.S.E. supports the position presented by AMFEP during the 1st ADWG meeting (i.e. the derogation	

		request for subtilisin).	
LD		Is the criterion on enzymes of relevance for other products? Addition of enzymes in other product groups would be interesting.	Analysis of extending the derogation to all detergent product groups is discussed below.

Summary of comments and further information on subtilisin

Derogation request was received for an enzyme protease (subtisilin) currently used in laundry and dishwasher detergents. Amfep, the trade body, provided supporting information which is summarised below.

Subtilisin hydrolyses protein removes proteinaceous deposits and stains. It works effectively at reduced temperature, enabling washing at low temperature (so called cold wash). There seems to be no alternative ingredient or technology which allows for the same efficiency. Other enzymes e.g. alpha-amylase, lipase, pectate lyase have different catalytic activities and remove other type of deposits and stains (starch, fat and pectin stains). Subtilisin cannot be however replaced by other enzymes so far.

As regards prevalence in the market for current detergent products, Amfep estimates that penetration has exceeded 90% for laundry and dishwasher detergents. For industrial and institutional products this is thought to be much lower, perhaps around 10%. Penetration is unknown with regard to hand dishwashing detergents and all-purpose cleaners. Research of available sources also did not give a response for products falling under the scope of all-purpose cleaners. Use in hand dishwashing detergents is mentioned [44].

It is asserted that the high penetration in consumer-oriented products is due to the very good performance at low temperature in removing protein stains conferred by the enzyme. Of the available protein-removing enzymes, subtilisin is the most prevalent. This effect could only otherwise be achieved by use of higher temperature and/or increased use of phosphates or phosphonates. Both of these parameters are discouraged by the EU Ecolabel. The relatively high profile of environmental aspects in the consumer domain is considered a major factor in the difference in penetration between the consumer and industrial markets. A tightening of criteria related to phosphates in I&I products are expected to lead to greater enzyme penetration there too.

In accordance with Annex VI of CLP Regulation, subtilisin (Index no. 647-012-00-8) has a harmonized classification as:

- STOT SE 3 (H335),
- Skin Irrit. 2 (H315),
- Eye Dam. 1 (H318),
- Resp. Sens. 1 (H334).

In 2010, subtilisin was classified as Aquatic Acute 1 (H400) by self-classification when it was registered under REACH. Regulation (EU) No 286/2011 added new classification criteria for long-term aquatic hazard based on chronic aquatic toxicity. On the basis of the new criteria, a recent study conducted by the REACH SIEF for subtilisin indicated that it should be classified as Aquatic Chronic 2 (H411) even though it is readily biodegradable.

In 2011, subtilisin was derogated from the criteria for Aquatic Acute 1 (H400) from the relevant criteria documents for Nordic Swan and EU Ecolabel. A statement written by Novozymes A/S on inactivation of subtilisin was delivered to the Commission as input for the justification document for derogation. The statement was enclosed to the derogation request. Novozymes conducted a study on degradation/inactivation of subtilisin in waste water treatment plants and during use and transport to the sewer system. The case studies investigated represented extreme loadings compared to 'normal' use conditions but even so demonstrate that it can be reduced to below or near detection limits. The study showed that more than 99.99% of subtilisin is deactivated in waste water treatment plants and that 80% of subtilisin can be assumed to be degraded/inactivated during use and transport in the sewer system.

Subtilisin does not contribute significantly to the overall mixture classification. Since it is never dosed at or above the concentration of 1% (typically 0.01%-0.5%) It does not contribute to a final product classification as respiratory sensitizer (or the other health hazard endpoints) nor will it contribute to a product classification as aquatic chronic 2-4.

The current derogation regarding aquatic toxicity is presented below.

Table 63. Overview of the current derogations for subtilisin

Product group	H400 Aquatic Acute 1	H411 Aquatic Chronic 2
Laundry detergents	Yes	No
Detergents for dishwashers	Yes	No
Industrial and Institutional laundry detergents*	Yes	No
Industrial and institutional automatic dishwasher detergents*	Yes	No
Hand dishwashing detergents	No	No
All purpose cleaners	No	No

* the current derogation for I&Is is for enzymes, not explicitly subtilisin only

Amfep asked for derogation for H400 and H411 for all EU Ecolabel criteria for detergents. Nevertheless, information regarding use of subtilizing in APC and HDD applications was very limited.

It is proposed that the derogation is included for laundry and dishwasher products, both domestic and industrial & institutional, and for hand dishwashing detergents for H400 and H411.

Subtilisin*	H400: Very toxic to aquatic life H411: Toxic to aquatic life with long-lasting effects

* Applies for LD, ILLD, DD, IIDD, HDD

Additionally, the current derogation for enzymes (as given below) shall be kept for all product groups, providing the additional requirement for enzymes which shall prevent or reduce the exposure for emplyees and users is kept (see Section 8.12.10 for more information on requirement for enzymes).

Enzymes*	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled H317: May cause allergic skin reaction

* Including stabilisers and other auxiliary substances in the preparations.

8.12.5.3 6-(phthalimido)peroxyhexanoic acid (PAP)

A derogation request was received following the 1st AHWG meeting for 6-(phthalimido)peroxyhexanoic acid (PAP). PAP is classified with H400 (acute aquatic toxicity category 1) and with H412 (chronic aquatic toxicity category 3). The derogation was asked for all detergent and cleaning product groups.

According to information provided, PAP is used as '*a low temperature bleach and disinfecting agent in household and professional detergents to obtain important savings in the energy consumption, reduction of alkalis, reduction of rinsing water and increment of the lifespan of textiles*. *Its high activity allows a low dosage without the use of activators and thus resulting in savings in the transportation of raw materials and finished products*'.

Stakeholders explained that PAP is used as a bleaching agent (in low percentages being the recommended dosage 0,21 g/l of washing solution) or as disinfecting agent in which its concentration needs to be much higher, even 17%. This kind of products is however excluded from the EU Ecolabel scope.

It was further explained that when used in detergents, PAP will rapidly degrade in the effluent to 6-(phthalimido)hexanoic acid (PAC; CAS number 4443-26-9). The applicant attached two studies demonstrating this rapid degradation conducted in 90s:

- Stability of PAP (phthalimido perhexanoic acid) in sewage systems [45]
- PAP (phthalimidoperoxyhexanoic acid) – Abiotic degradation as a function of pH [46].

The studies confirm that PAP is mainly degraded to PAC, which is not classified as hazardous for the environment and this substance is rapidly biodegradable. The first study shows that 97% of PAP is degraded

in 1 hour from the contact of the PAP with raw sewage and activated sludge. It is thus considered that all PAP will be degraded completely.

According to information from industry no substitutes which would allow this low temperature and low pH washing were available on the market. Supplementary information and documents were provided to IPTS by the applicant. It contained claims from several companies which promote their products for low temperature washing and indicate savings due to use of bleaching agent with PAP (e.g. products from Chrysteyns (X-Tend), Diversey (Clax Bright, bleech system for commercial laundries).

Regarding the scope of the derogation, it is found reasonable to consider it only to laundry detergent products, domestic and professional ones. Little information was received regarding it use and related environmental benefits in other product groups. In this case the derogation should be granted, it is proposed to set a maximum limit for PAP use. The reported content of PAP used as a bleaching agent in laundry preoduct is 0.6 g/kg laundry. This issue will be discussed at the 2nd AHWG meeting.

Product group	Derogation	Classified
LD / IILD	6-(phthalimido)peroxyhexanoic acid (PAP) used as bleaching agent at max concentration of 0.6 g/kg laundry	H400: Acute aquatic toxicity category 1 H412: Chronic aquatic toxicity category 3

8.12.5.4 Optical brighteners

Optical brighteners (fabric whitening agents, fluorescent whitening agents (FWA)), are fluorescent dyes that glow blue-white while exposed to ultraviolet light. They cause that yellowed fabrics appear white. Typical concentration of optical brighteners in the laundry product is below 0.5%.

They may be potentially toxic to humans and to the aquatic environment. As they are not readily biodegradable, may bioaccumulate and pose a potential hazard to aquatic life. Additionally, optical brighteners undergo photo degradation and numerous metabolites may be produced.

Nowadays, there are alternatives available on the market. There are optical brightener-free products or products that should be used with other agents such as the so-called non-chlorine oxygen based bleaches that prevent the use of optical brighteners getting a good washing performance. Table 64 presents the current derogation included in the EU Ecolabel criteria set for laundry detergents.

Table 64. Existing derogation for optical brighteners

Product group	Decision	Derogation	Classified
Laundry detergents	2011/264/EU	Optical brighteners (only for heavy duty laundry detergent)	H413

Not much feedback was received regarding the need to keep this derogation. One stakeholder commented that, according to their knowledge, there were no optical brighteners in use classified with the H413 phrase. They were aware of some optical brighteners classified with H412, but no derogation request was submitted. It is proposed to remove this derogation from the criteria text.

8.12.5.5 Derogation for peracetic acid and hydrogen peroxide

During and following the 1st AHWG meeting coments and a derogation request was received for peracetic acid (PAA) as a bleaching agent.

Table 65. Stakeholders comments on derogation for peracetic acid and hydrogen peroxide

PGs	Stakeholders comment	IPTS analysis and further research
IILD IIDD	A.I.S.E. would like to ask for a derogation for peracetic acid and hydrogen peroxide.	**Comment accepted** According to comments from several CBs, there have

IILD IILD	Derogation dossier has been submitted for H400, H410, H411 and H412. Derogation for hydrogen peroxide is also compulsory as peracetic acid cannot exist without hydrogen peroxide. Peracetic acid is indeed commercialized as a stabilized mixture at equilibrium of peracetic acid, hydrogen peroxide, acetic acid and stabilizers. See derogation request for further details	been hardly any I&I products licences because of lack of derogation for peracetic acid. Analysis of the derogation request was conducted.
All	We would like to see a harmonisation across all product categories that are used in a machine.	Information provided in the derogation request substantiated granting derogation for IILD only. Additional technical information indicating environmental benefit and lack of alternatives would be needed in order to grant derogation to other product groups.

Regarding the derogation request and according to the CLP inventory peracetic acid has a harmonised classification, as follows:

Flam. Liq. 3	H226	Acute Tox. 4	H312	Acute Tox. 4	H332
Org. Perox. D	H242	Skin Corr. 1A	H314	**Aquatic Acute 1**	**H400**
Acute Tox. 4	H302				

Additionally, the CLP inventory contains self-classification submitted for H410 and H411.

Bleaching action is necessary during laundry washing to remove oxidative sensible stains (e.g. tea, wine, grass, coffee), which cannot be removed only by surfactants. They require "bleaching" in order to visually disappear from the treated surfaces such as textile.

The following information was provided in the justification of the derogation request:

PAA is produced industrially by the autoxidation of acetaldehyde. It also forms as the result of an equilibrium reaction between acetic acid and hydrogen peroxide, with the equilibrium constant dependent on the concentrations and conditions of reaction.

Further, it can be generated in-situ from a powder by mixing TAED and sodium percarbonate and this approach is well accepted in household Ecolabel criteria. Nevertheless the powder approach is not always possible for industrial application for several reasons:

- Sodium Percarbonate and TAED generate PAA in alkaline conditions, which is not always desired for an industrial process where the pH can be acidic (e.g. rinsing step)
- Sodium Percarbonate and TAED contribute to salt level in the washing liquor and an increase of the conductivity whilst this conductivity has to be as low as possible in some washing processes
- Sodium Percarbonate and TAED are part of a complete detergent and cannot then be dosed separately easily leading to a loss of flexibility to optimize the washing process
- Sodium percarbonate and TAED do not generate PAA straightaway and reaction could be uncomplete depending on the reaction time, the pH, the temperature and could lead to low bleaching performances. As a consequence a straightforward available peracetic acid, already generated and with a well-established concentration is needed.

As a consequence, I&I sector uses a stabilized peracetic acid mixture in liquid form which can be dosed in a multi-component system wherever needed. This is preferred within the I&I domain because:

- Although bleaching action can be provided by chlorine-based bleaching agents, chlorine-based products are not allowed in Ecolabel criteria.
- Although bleaching action can be provided by hydrogen peroxide alone, it requires high temperatures and high pH which implies not only textile damage (which shorten the lifetime of the textile) but also higher energy consumption.

- Although bleaching action can be provided by ε-phthaloimidoperoxyhexanoic acid (DID 2615), the Ecotox profile and classification (H400) does not permit use at a concentration acceptable to reach the expected results.

The current derogation request is submitted for the equilibrium liquid formulation of hydrogen peroxide/peracetic acid/acetic acid/water, of which the first two compounds are subject to the risk categories ({H400},{H400, H410, H411, H412} respectively). In this format, hydrogen peroxide may be present in the mixture from 5% to 25%, with peracetic formulations typically in the concentration range 5% to 15% in water.

The basis of the derogation is formulated on two premises:

- That the net effect of use of peracetic/peroxide as a bleach has net overall benefits compared to alternatives via reduced temperature, chemical loading and improved longevity of textiles due to milder chemical activity.
- That the peracetic acid/peroxide is never discharged in its native state directly to the environment; that it is substantially degraded in chemical activity during the use phase; and undergoes further degradation to harmless levels when discharged to the sewage system and subsequent waste water treatment plant. By-products after degradation include acetic acid and water. This degradation occurs already during the washing process and a very limited amount of peracetic acid or hydrogen peroxide could be found in the waste water and will further degrade in the waste water.

Industry considers that if a laundry process does not include bleaching action, the product will not be able to meet 100% the market need.

The request for derogation comprised two individual derogations for peracetic acid (5% and 15% equilibrium mixtures) and for hydrogen peroxide separately. Peracetic equilibrium mixture naturally contains hydrogen peroxide. Allowing single substance derogation for hydrogen peroxide would risk peroxide being added as an ingredient in the absence of peracetic acid, which shall not be the case. It is proposed that the derogation should permit using hydrogen peroxide but only as an adjunct to peracetic addition. It should also be noted that there are currently liquid IILD products registered, as reported because of the lack derogation for peracetic acid.

Peracetic acid does appear to confer net environmental benefit and hence should be strongly considered for derogation, but only in the context of liquid IILD products. One stakeholder suggested that bleach catalysts are used also in some IIDD products to allow for a better bleach performance at lower temperatures. However, in response to a request placed during the consultation period, no further information has been received and trade bodies have not responded regarding the need to have this derogation extended to IIDD products as well.

At this stage, the proposed derogation is formulated as follows:

Derogation	Classified
Peracetic acid/ hydrogen peroxide bleaching agent*	H400: Very toxic to aquatic life H410: Very toxic to aquatic life with long-lasting effects

* Applies only for IILD

8.12.5.6 NTA present as impurity in GLDA and MGDA

Nitrolo Triacetic Acid (NTA) is an impurity in complexing agents MGDA and GLDA. NTA It is classified with H351 (carcinogenic cat..2) above specific concentration of 5%. These agents are used in detergent products mainly in order to substitute phosphate.

Industry and Competent Bodies were contacted in order to evaluate the need of keeping the derogation. Industry stakeholders confirmed that some minor amounts of NTA are inherent to the production process of MGDA and GLDA and although progress has been made to lower its content it cannot be eliminated completely. Typical concentration of NTA in GLDA (as 100% substance) is around 0,2% resulting in typical concentrations in the final cleaning products of below 0,1%

Due to ban on phosphates it is expected that the use of MGDA and GLDA in detergent product will increase. It is proposed to keep the current derogation; however the concentration of NTA can be reduced to 0,2% w/w to reflect the progress made by the industry.

Product group	Derogation	Classified
all	NTA as an impurity in MGDA and GLDA (*)	H351 Suspected of causing cancer

(*) in concentrations lower than 1.0 % w/w in the ingoing substance as long as the total concentration in the final product is lower than 0.10 % w/w

8.12.5.7 Derogation for preservatives

Consultation is ongoing. The results will be presented at the 2nd AHWG meeting.

8.12.6 Sub-criterion (c): Substances of Very High Concern (SVHCs)

Common text proposal – SUBSTANCES OF VERY HIGH CONCERN
The final product shall not contain any ingoing substances that have been identified according to the procedure described in Article 59(1) of REACH, which establishes the candidate list for substances of very high concern. *Assessment and verification:* The applicant shall provide a declaration of compliance, supported by declarations from their suppliers, as appropriate, on non-presence of the candidate list substances. Reference to the latest list of substances of very high concern shall be made on the date of application.

8.12.6.1 Feedback from stakeholders following 1st AHWG meeting

Table 66. Stakeholder comments regarding SVHCs

PGs	Stakeholder comments	IPTS analysis and further research
All	Delete the reference to Regulation 66/2010 and formulate the requirement as a ban of the use of substances listed as SVHC and vPvB and on the candidate list. No lower limit.	**Comment accepted.** The criterion was reformulated accordingly.
All	Substances identified as substances of very high concern.....shall not be intentionally added to the product. No lower limit. We take it for granted that no derogation proposed is in this group of substances. Delete the reference to regulation 66/2010 - this is guidance to the criteria development and irrelevant for the applicant. The reference to Regulation 1272/2008 should be in a footnote.	

Stakeholders raised few comments related to the wording of this criterion, the necessity of references to EU Ecolabel and CLP Regulation. Accordingly, the text of the proposed harmonised criterion has been reviewed and simplified. In the measurement threshold clear indication that SVHCs should not be present in the final product regardless of the concentration is given.

8.12.7 Sub-criterion (d): Fragrances

Common text proposal - FRAGRANCES
Any ingoing substance added to the product as a fragrance shall be manufactured and handled following the code of practice of the International Fragrance Association (IFRA) available at http://www.ifraorg.org. The recommendations of the IFRA Standards concerning prohibition, restricted use and specified purity criteria for substances shall be followed by the manufacturer. *Assessment and verification:* The applicant, their supplier or fragrance manufacturer, as appropriate, shall provide a signed declaration of compliance.

8.12.7.1 Feedback from stakeholders following 1st AHWG meeting

Table 67. Stakeholder comments regarding fragrances

PGs	Stakeholder comments	IPTS analysis and further research
DD	Perfumes should not be allowed in dishwasher detergents, they have a significant environmental impact, they are not beneficial for the cleaning process and since they are used in a dishwasher the consumer will not be able to enjoy their smell.	This issue was discussed during the meeting and no agreement was reached. Split views exist between stakeholders. Use of fragrances is already banned in IIDD products. No consensus over its extension to other product groups was achieved. It is however clear that the amount of fragrances used is limited through the CDV requirement.
IIDD /IILD	All fragrances should be banned in professional products	
	The fragrances manufacturer already proved a IFRA declaration and a declaration specifying the content of each of the substances in the fragrance listed according to the annex VII of regulation (EC) nº 648/2004. We don't believe necessary that the applicant must sign another declaration of compliance when, before, the fragrance manufacturer has signed it. And the fragrance manufacturer is who know full composition.	**Comment accepted** Reworded the assessment and verification to make it clear that it is possible to get verification from the fragrance manufacturer.
	We welcome the JRC proposal to add hydroxyisohexyl 3-cyclohexene carboxaldehyde (HICC), Atranol and Chloroatranol to the list of specified excluded ingoing substances and mixtures in sub-criterion (a). This exclusion is fully justified by their strong sensitizing properties tending to cause skin allergies. However, we still have concerns about fragrances in general in EU Ecolabel products. BEUC and EEB would like to stress once more the fact that fragrances are not needed elements since they do not contribute to maintaining a high level of efficiency. Awarding an EU Ecolabel to a product that contains superfluous hazardous substances would undermine the credibility of the label.	See above (1st comment)

8.12.7.2 Summary of comments and further information on fragrances

Fragrances are used to neutralise the inherent odour of detergent chemicals and give laundry, dishes and other items being cleaned a pleasant smell. These do not enhance the cleaning properties of such products. Instead, fragrances can have negative environmental and health effects. They are very often classified as toxic to aquatic environment. Some fragrances are sensitizers and known triggers of allergic reactions such

as asthma and contact dermatitis [47]. In addition to the skin exposure, fragrances are volatile and therefore a perfume exposes also the eyes and naso-respiratory tract.

Due to this fact several restrictions are set on use of fragrances in the EU Ecolabel criteria. The following comments were provided to the last harmonised criterion proposal.

No agreement could be reached along the consultation process regarding the total exclusion of fragrances from some product groups. So far fragrances are banned in IIDD products. Some stakeholders asked to ban fragrances in detergent products and in all industrial and institutional ones. Other were against this, indicating that the restrictions on fragrances are already significant (sub-criteria (a) and (b) of the excluded and restricted substances criterion).

With regard to current derogation (see Table 68) it was asked to extend it to IILD products as well.. The tendered rationale for this was that CDV would in any case limit the amount of fragrance, assuming they have significant contribution on the CDV value.

Table 68. Current derogation for fragrances classified with H412

Product group	Decision	Derogation	Classified as
Detergent for Dishwashers	2011/263/EU	Fragrances	H412
Laundry Detergents	2011/264/EU		
Hand dishwashing detergents	2011/382/EU		
All-purpose cleaners and sanitary cleaners	2011/383/EU		

Due to lack of licences in this product group it is difficult to evaluate whether the formulation without the above given derogation is possible. For clarity, it should be added that the restriction in sub-criterion (b) refers to 0,010% per substance and not per mixture. Only in the case where information on substances is not available, data for mixture should be used.

Additionally conducted consultation with Competent Bodies, licence holders and manufacturers revealed general agreement that the derogation for H412 shall be kept in the revised criteria.

Verification

With regard to verification process it was queried why the proposed revised criterion seemed to suggest that the applicant should need a signed declaration when the manufacturer had already provided one. It is clarified in the revised proposal that the manufacturer’s declaration is indeed sufficient, but must be submitted appropriately within the overall package of declarations by the applicant. A clarification shall be added in the user manual.

Restriction and exclusion of fragrances

Fragrances are proposed to be restricted but not banned in the EU Ecolabel for all product groups with the exception of the IIDD, where there is currently a ban on fragrance use.

The restriction on the amount and type of substances used as fragrances comes indirectly from the 'toxicity to aquatic environment' criterion since fragrances usually have significant contribution on the CDV value. Also the criterion on excluded and restricted substances limits the use of classified fragrances (sub-criterion (b)) and excludes and limits use of few particularly considered as undesired, e.g. due to their sensitizing properties (sub-criterion (a)). In addition, recommendations of the IFRA concerning prohibition, restricted use and specified purity criteria for materials shall be followed by the manufacturer, which is requested in the above requirement.

It is considered that the industrial and institutional dishwasher detergents do not require the addition of fragrances since they are not beneficial for the cleaning process and the consumer will not be able to enjoy their smell. This requirement was introduced during the criteria development and is maintained in the revised criteria version. It is included in the section (a) of the criteria on excluded and restricted substances and not as a separate criterion.

8.12.8 Sub-criterion (e): Preservatives

Common text proposal - PRESERVATIVES
(i) The product may only include preservatives in order to preserve the product, and in the appropriate dosage for this purpose alone. This does not refer to surfactants, which may also have biocidal properties. (ii) The product may contain preservatives provided that they are not bio-accumulating. A preservative is considered to be not bio-accumulating if BCF < 100 or log K_{ow} < 3,0. If both BCF and log K_{ow} values are available, the highest measured BCF value shall be used. (iii) It is prohibited to claim or suggest on the packaging or by any other communication that the product has an antimicrobial or disinfecting effect. *Assessment and verification:* The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any preservative added, and information on its BCF and/or log Kow values. The applicant shall provide also artwork of the packaging.

8.12.8.1 Feedback from stakeholders following 1st AHWG meeting

Table 69. Stakeholder comments regarding preservatives

PGs	Stakeholder comments	IPTS analysis and further research
All	Part D) Why is it no longer mentioned that the amount of biocide present can only be in a concentration to preserve the product. And that the product cannot claim antibacterial properties?	**Comments accepted.** The phrases regarding levels only being used sufficient for preservation and ban on microbial claims have been reintroduced in all criteria.
All	We strongly believe that only biocides with preservative properties should be allowed in EU Ecolabel products. We are very concerned about the removal of the following text: "The product may only include biocides in order to preserve the product, and in the appropriate dosage for this purpose alone. This does not refer to surfactants, which may also have biocidal properties."	
All	BEUC and EEB suggest it should be clarified that the EU Ecolabel should not be awarded to detergents which are biocidal products. This is a requirement of Article 69(2) of the biocidal products regulation (EU No 528/2012) that prohibits biocidal products to be marketed with environmental claims. Since the Ecolabel is a label of environmental excellence, biocidal products with an EU Ecolabel would contradict the general EU Ecolabel philosophy and confuse consumers by harming the credibility of the EU Ecolabel.	
All	The thresholds reported in the text are in line with Directive 67/548/CEE but not with Regulation (EC) No 1272/2008 (BCF = 500, log Pow = 4). As Directive 67/548/CEE will be replaced in June 2015 by Regulation (EC) No 1272/2008, the BCF and log Pow thresholds mentioned in the text should rather be 500 and 4, respectively.	Although the impending Regulation (EC) No 1272/2008 specifies new thresholds for BCF and log Pow, it was agreed at the EUEB level that for the purpose of Eco-labelling the stricter thresholds pertaining to Directive 67/548/CEE should be retained. EU Ecolabel has always sought to apply standards that meet or exceed legislative requirements in
All	The values for a preservative not being considered as bioaccumulating should be aligned with REACH, as follows: BCF < 500 and log KOW < 4.	

All	According to CLP Regulation part 4 (environmental hazards) the criterion for the potential for or actual bioaccumulation is given in table 4.1.0 as: the experimentally determined BCF ≥ 500 (or, if absent, the log Kow ≥ 4). It is proposed to overtake this criterion into d (Biocides) as well as f (Colorants).	order to promote leading edge performance. In additiona it should be noted that under REACH the values for bioaccumulation are also different to the ones of CLP (e.g. the BCF value is 2000). The currently valid values for BCF and log Pow are kept in the revised criteria.

8.12.8.2 Summary of comments and further information on biocides

Biocides are used in detergent products for preservation purposes. They prevent the product from spoiling during storage by preventing the growth of microorganism. This criterion is kept as it is formulated in the current criteria with the addition of the requirement that preservatives used shall not be bio-accumulating.

As agreed at the 1st AHWG meeting and subsequent EUEB meeting the following statement is maintained in the criteria: "*The product may only include preservatives in order to preserve the product, and in the appropriate dosage for this purpose alone. This does not refer to surfactants, which may also have biocidal properties".*

The same refers to keeping the statement that antibacterial properties cannot be claimed on the product for all product groups. Finally, as explained in the section on definitions the sub-criterion name if changed to 'preservatives'.

As given in the Table 69 several stakeholders raised the point that the BCF/log P_{ow} thresholds reported in the text are in line with Directive 67/548/CEE but not with CLP Regulation (BCF = 500, log K_{ow} = 4). As since June 2015 Directive 67/548/CEE is eplaced by Regulation (EC) No 1272/2008, the BCF and log K_{ow} thresholds mentioned in its text amount 500 and 4, respectively. As explained in Table 69 the EU Ecolabel should exceed legislative requirements in order to promote best performing products and it is proposed to keep the currently valid, stricted thresholds.

8.12.9 Sub-criterion (f): Colouring agents

Common text proposal – COLOURING AGENTS
Colouring agents in the product shall not be bio-accumulating. A colouring agent is considered not bio-accumulating if BCF < 100 or log K_{ow} < 3,0. If both BCF and log K_{ow} values are available, the highest measured BCF value shall be used. In the case of colouring agents approved for use in food, it is not necessary to submit documentation of bio-accumulation potential. *Assessment and verification:* The applicant or their suppliers, as appropriate, shall provide a signed declaration of compliance, together with copies of the safety data sheets of any colorant added together with information on its BCF and/or log K_{ow} value, or documentation to ensure that the colouring agent is approved for use in food.

During the development of the criteria for Nordic Swan [48] it was emphasized that the environmental properties of colorants are often very poorly documented. Many of them are toxic; nevertheless they are used in very small quantities. In order to reduce the environmental and health related impacts of these ingredients it was agreed to exclude colorants that may bioaccumulate. It was agreed to add this criterion to all EU Ecolabel criteria sets related to detergents and cleaning products in order to harmonise requirements across all product groups.

8.12.10 Sub-criterion (g): Enzymes

Common text proposal – Enzymes
Only enzyme encapsulates (in solid form) and enzyme liquids/slurries shall be used. *Assessment and verification:* The applicant shall provide a declaration of compliance supported by copies of the safety data sheets of any enzyme added.

8.12.10.1 Summary of comments and further information on enzymes

Table 70. Stakeholder comments regarding enzymes

PGs	Commented area	Stakeholder's comment	IPTS assessment and further research
DD IID D/II LD	Horizontal alignment of the requirement that "Enzyme must be in liquid form or dust-free granulate" Purity requirement	Form of enzymes Amfep agrees on the proposal from the Commission. Description of form of enzymes is not horizontally aligned. The following text shall be used for all criteria. "*Enzyme must be in liquid form or dust-free granulate*". Free from micro-organism remnants In Decision 2003/31/EC, purity of enzyme was required in Criteria 7; "The enzyme production micro-organism shall be absent from the final enzyme preparation." This requirement was removed in the next revision (Decision 2011/263/EU). It is because Amfep communicated with the Commission that time that the commercially available enzyme products for detergent and cleaning products do not contain production micro-organisms. The situation is to date unchanged. Because of progress of the modern biotechnology, Genetically Modified Micro-organisms (GMM) are used for manufacture of enzymes used for detergent and cleaning products in EU. This technology ensures manufacture of the targeted enzyme in high purity. The manufacture process must comply with the contained use laid down in Directive 2009/41/EC. Thereby it is not necessary to revive the purity requirement.	**Accepted** The following text in included in all criteria documents "*Only enzyme encapsulates (in solid form) and enzyme liquids/slurries shall be used*". See additional information below.
LD / IIL D	Use of enzymes	Starting with the assumption that we recognize and have proof of the very good performance given by enzymes in general, they should not be excluded nor included indiscriminately. Their GMO based synthesis has to be studied in depth, evaluating among other things the different "generations".	

Summary of comments and further information on enzymes

The use of enzymes in the detergents can cause health and environmental problems due to their scattering and their purity. The latter is addressed in the Directive 2009/41/EC while the further is restricted through this criterion. The scattering of enzymes is reduced as long as they are not in a dust-free granulate that can be inhaled by employees in manufacture processes or by end users of the detergent product.

Liquid/slurry and dust-free forms: Initially, enzymes used in detergent products were causing allergies and irritation to both, employees in the production processes and to consumers. In order to eliminate this impact

dust-free forms of enzymes were developed and are available for the detergent formulations [49] . Also liquid or slurry forms can be safely used.

In June 2015 the industry association AISE published a revised version a guidelines on safe handling of enzymes [50]. In the guideline it is specified that two main forms of enzyme products are supplied for detergent manufacture:

- Enzyme encapsulates (in solid form, for manufacture of powders or tablets),
- Enzyme liquids/slurries.

Powdered enzymes are excluded due to the higher risk of enzyme dust generation; while the encapsulated ones must meet set quality standard on "*the level of free enzyme dust present in the bulk material and/or the resistance of the encapsulate to damage within the process*". As the liquids or slurries are not encapsulated, risk of exposure to airborne enzyme or to dust due to aerosolization or spillage drying out, respectively, is also higher.

As enzymes can be used in different detergent and cleaning products, it was proposed to include in all criteria documents the text that "Only enzyme encapsulates (in solid form) and enzyme liquids/slurries shall be used". Alternatively, another similar formulation could be used as for example: "Enzymes shall be in liquid form or dust-free granulate."

The purity of enzyme production: Stakeholders provided information that the commercially available enzyme products for detergent and cleaning products do not contain production micro-organisms. This is confirmed also in statements from associations [51]. Little scientific information is available on the use enzymes for consumer products, if compared with information on enzymes used in food. It is however clear that modern biotechnology allowed achieving great progress in the production of enzymes.

Use of genetically modified microorganisms (GMM) for production of enzymes, the so called "contained use", is controlled Directive 2009/41/EC [52]. Any company wishing to produce enzymes needs to notify a competent authority, who will verify the installation and whether the work does not pose any danger to human health or to the environment [53].

According to the information received in the EU genetically modified micro-organisms (GMM) are used for manufacture of enzymes used for detergent and cleaning products. GMM is removed during the recovery processes, due to the requirement for the contained use, so that final products do not contain them. Additionally, the production microorganisms are considered companies confidential information, 'know-how' or 'core technology' of the company. Released production organisms could be relatively easily isolated from enzyme products and identified. Their absence is controlled with e.g. ISO procedures and the company issues a statement. Therefore, enzyme industry ensures that none production organisms are present in final products in terms of regulatory compliance as well as protection of business. Thereby is seems not to be needed to keep mentioning of the purity of enzymes.

8.12.11 Sub-criterion (h): Micro-organisms

Common text proposal – MICRO-ORGANISMS

(i) *Identification*: all intentionally added micro-organisms shall have an American Type Culture Collection (ATCC) number or belong to a collection of an International Depository Authority (IDA)

(ii) *Safety*: all intentionally added micro-organisms shall belong to:

- Risk Group I as defined by the Directive 2000/54/EC – biological agents at work
- The Qualified Presumption of Safety (QPS) list issued by the European Food Safety Authority (EFSA)

(iii) *Absence of contaminants*: pathogenic micro-organisms, as defined below, shall not be in any of the strains included or in the finished product when screened using the indicated test methods or equivalent:

- E. Coli, test method ISO 16649-3:2005
- Streptococcus (Enterococcus), test method ISO 21528-1:2004
- Staphylococcus aureus, test method ISO 6888-1
- Bacillus cereus, test method ISO 7932:2004 or ISO 21871
- Salmonella, test method ISO6579:2002 or ISO 19250

(iv) all intentionally added micro-organisms shall not be GMO

(v) *Antibiotic susceptibility*: all intentionally added micro-organisms shall be susceptible to each of the five major antibiotic classes (aminoglycoside, macrolide, beta-lactam, tetracycline and fluoroquinolones) in accordance with the EUCAST disk diffusion method or equivalent.

(vi) *Microbial count*: products in their in-use form shall have a standard plate count equal or greater than $1x10^5$ Colony Forming Units (CFU) per ml months according to ISO 4833-1:2014.

(vii) *Shelf life*: the minimum shelf life of the product shall not be lower than 24 months and the microbial count shall not decrease by more than 10% every 12 months according to ISO 4833-1:2014.

(viii) *User information*: the product label shall include the following information:

- That the product contains micro-organisms
- That the product shall not be used with a spray trigger mechanism
- That the product should not be used on surfaces in contact with food
- An indication on the shelf life of the product

Assessment and verification:
The applicant shall provide:

(i) the name (to the strain) and identification of all micro-organisms contained in the product (ATCC or IDA numbers)
(ii) documentation demonstrating that all micro-organisms belong to Risk Group I and the QPS list
(iii) documentation demonstrating that the pathogenic micro-organisms are not present in the product
(iv) documentation demonstrating that all micro-organisms are not GMO
(v) documentation demonstrating that all micro-organisms are susceptible to each of the five major antibiotic classes indicated
(vi) documentation of CFU per ml of in-use solution (for undiluted products, the dilution ratio recommended for "normal" cleaning shall be used)
(vii) documentation of CFU per ml of in-use solution every 12 months for a product stored until the end of its shelf life. If the applicant is seeking an EU Ecolabel for a new formulation and such data is not available, the applicant shall provide the Competent Body with the information within one year.
(viii) a copy of the product's label

Table 71. Stakeholder feedback on micro-organisms

PGs	**Stakeholder feedback**	**IPTS analysis and further research**
LD	We think that there is not enough information about this kind of products, it is difficult define the concept of micro-organism and applications.	**Comment accepted.** An explanation on the concept of migro-organisms in detergents and cleaning products is provided in the section below, along with market data and application data.
APC	Our company develops and produces cleaning agents for professional and household use, which contain probiotic microorganisms. The microorganisms used are all classified as food grade (class 1 - used for preparation of food stuffs, i.e. lactic acid bacteria). They do not only clean better than conventional chemical based cleaners, the surfaces cleaned are also free of other (pathogenic) microorganisms and studies have shown, that the cleaning effect stays longer than with comparable conventional cleaners or even disinfectant cleaners (see results of Master thesis "FH Wels" and results of "University of Applied Life Sciences, Department of Food Hygienic, Vienna". Both studies compare conventional cleaners and disinfectant with our "probiotic" cleaning range, which consists mainly of positive microorganisms. This is why - in our opinion - the EU Ecolabel should not exclude cleaners, which contain microorganisms. Some more studies, which underline the safety our microorganism - based cleaners, are attached: 1. Study about the general cleaning effects 2. Study about the cleaning effects in a school kitchen (compare with chemical cleaners and disinfection and cleaner which contains micro-organisms) 3. Certificate of skin compatibility 4. Certificate of grippy on different flooring materials 5. Certificate for compatibility of different materials (marble, acrylic glass, ...) And at last the good response of our customers and rising on the market and demand.	**Comment accepted.** The section below covers the issues mentioned in this comment (cleaning action of detergents contain micro-organisms, effectiveness, etc.).

8.12.11.1 Further research on micro-organisms in detergents and cleaning products

The current EU Ecolabel criteria for the different detergent and cleaning product groups contain statements about micro-organisms as follows:

- laundry and dishwasher detergents: none.
- I&I laundry and dishwasher detergents: none.
- all-purpose cleaners and sanitary cleaners: "The products (…) must not contain micro-organisms that have been deliberately added by the manufacturer."
- hand dishwashing cleaners: "The products (…) must not contain micro-organisms that have been deliberately added by the manufacturer."

During the initial consultation period, the 1st AHWG meeting and after, multiple stakeholders highlighted that the use of micro-organisms in products such as all-purpose cleaners is becoming more widely spread and such products are often marketed as having lower environmental impacts as compared to their regular products. Other stakeholders also pointed out that currently little research has been done regarding their efficacy and their safety for users.

Utility of micro-organisms in detergent and cleaning products

The world is full of micro-organisms, from bacteria to viruses, and they can be both beneficial and detrimental to life on Earth. Micro-organisms that have been deemed beneficial have been added to certain consumer products for quite some times, e.g. probiotics in dairy products, and it is an area that is quickly developing. Applications have been found in agriculture, bioremediation and cleaning products, among many others [54].

Manufacturers of cleaning products containing micro-organisms claim two main modes of actions. First, micro-organisms are used as producers of enzymes that degrade organic matter (e.g. dirt, food) and the cleaning action can be prolonged if spore-forming bacteria are used. Indeed, these types of micro-organisms will stay on the cleaned surface as spores even after the nutriments are gone, becoming active again when more soil appears, and thus better performing than enzymes alone. The second mode of action is the colonisation of surfaces – beneficial micro-organisms are claimed to be able to out-compete unwanted micro-organisms over food sources (soil), thus rendering the surfaces safer.

Current presence of cleaning products containing micro-organisms on the market

Internet research using keywords associated with detergents, cleaning products and micro-organisms and the study of manufacturers' catalogues showed that the types of products concerned most are in the all-purpose cleaners and sanitary cleaner categories. This has been corroborated by research performed by Health Canada [55]. While the presence of enzymes is common in laundry and dishwasher detergents, no products of this type were found containing intentionally added micro-organisms.

No data was found on the exact size of the market related to cleaning products containing micro-organisms but anecdotal data suggests that it has grown significantly in recent years, with multiple producers present on the European market.

Regulation related to products containing micro-organisms

Spök and Klade [56] [57] concluded, in 2010, that cleaning products containing micro-organisms do not "smoothly fit into EU chemical, detergent or biocide legislation". Concerning the Detergents Regulation that is closely linked with the EU Ecolabel product groups examined, the European Commission was asked whether a product containing bacteria that feed on soil produced by dust mites "though it contains surfactants, does not seem to have a cleaning action within the meaning of ISO definition (i.e. "*the process by which soil is dislodged from the substrate and brought into a state of solution or dispersion*")" [58].

Micro-organisms in other ecolabel schemes

The following ecolabelling schemes were found to contain criteria related to micro-organisms: Nordic Swan (limited to professional sanitary products), Green Seal (USE), Good Environmental Choice Australia, Ecologo (Canada). The areas covered by the different schemes are all centred around the safety of the micro-organisms, efficacy and specific labelling requirements.

Efficacy of cleaning products containing micro-organisms

Although the field of research related to the efficacy of cleaning products containing micro-organisms is relatively new, a number of studies on the subject have been published.

In 1999, the city of Mackay (Australia) held a trial where a portion of the city's sewage system was equipped with apparatus that dosed a special formulation containing micro-organisms. The main results of this trial were that odours associated with sewers were reduced and the fat build-up commonly found in sewers was also reduced [59]. This study did not look at the cleanliness of the sewer system and therefore the results cannot be extrapolated to cleaning products for hard-surfaces.

Multiple studies have looked into the efficacy of cleaning product containing micro-organisms in lowering the count of unwanted micro-organisms – this approach is not disinfection as micro-organisms considered good or benign remain but these studies often compare the results to those of disinfecting formulas. Vandini *et al.* [60] demonstrated that cleaning products containing spores of three specific bacteria were effective, if used on a regular basis. The results of this study corroborate with those found by Kneifel and Domig [61] and Haslinger [62]. While the results are interesting, the study did not specifically look at how effective the products were at removing dirt, which is the main concern of the Detergents Regulation and the main criteria for the fitness of use of EU Ecolabel products.

The city of Gent (Belgium) has considered the use of products containing micro-organisms as part of its city-wide public procurement in order to reduce environmental impacts and on-sites studies were performed in order to assess the effectiveness of the products, both in terms of maintaining a more healthy microflora but also in terms of other aspects of cleaning, such as soil removal. The results show that the products, if used regularly, maintain a good level of visual cleanliness and odours were reduced. It was noted that special care needs to be taken for the cleaning and storage of the tools used for cleaning and the appropriate dosage must be used in order to obtain acceptable results [63].

Consultation with producers highlighted that microbial count is closely linked with product performance as a large number of micro-organisms ensures that all the soil can be treated and they can form a healthy microflora on the cleaned surface. Moreover, in order to ensure that cleaning products containing micro-organisms are efficient in removing soil, Nordic Swan requires all products awarded with the Nordic Swan ecolabel to meet the requirements on fitness of use but also to prove that they are efficient at removing protein, starch, and fat and/or vegetable oil [64].

Environmental benefits of products containing micro-organisms

No long-term or life cycle studies on the use of this type of product was found. Spök and Klade [56] noted that the formulation of the microbial cleaners selected for their study contained "much lower levels of acids and surfactants" and that the "claims of the producers are plausible" concerning the possible lower environmental impacts. Arvanitakis [55] also highlighted that potential environmental problems might arise if this type of cleaning products become more common and the releases into the environmental of micro-organisms is important.

Safety issues related to micro-organisms in detergent products

Multiple stakeholders raised the issue of the safety of the use of products containing micro-organisms. Currently no specific regulation exists on the safety criteria that these products must meet, as highlighted by Spök and Klade [56]. Nevertheless, the same study concluded that "there is no immediate threat for human health or the environment" while noting that some issues should be studied in more depth in order to confirm this absence of threat, such as the possible presence of unwanted microbes, possible concerns in case of chronic respiratory exposure, etc.

It should also be noted that no studies were found on safety issues related to cleaning products containing micro-organisms applied to surfaces also in contact with food. Although the micro-organisms in the products are considered to be benign, as one of the main avenues of work of these products is through spores that remain on the cleaned surface and reactivate when new soil is added, the extra load of micro-organisms might have health effects that should be studied in more depth.

These concerns are also considered in other ecolabelling schemes with most requiring that the micro-organisms used are identified, are part of the Risk Group I according to the Directive 2000/54/EC - biological agents at work [65], are not GMO, do not present antibiotic resistance and do not contain pathogen species.

Proposal for criteria on micro-organisms in detergents and cleaning products

As the market for these types of products is increasing and it is plausible that they could contribute to reduce the environmental impacts of detergents and cleaning products, it is proposed that products containing micro-organisms and falling within the scope of the EU Ecolabel criteria for Hard-Surface Cleaning Products (APCs) are accepted, if they fulfil the requirements of a new criterion on these substances. Due to safety concerns, the ban on the presence of micro-organisms is proposed to be maintained in the EU Ecolabel criteria for hand dishwashing detergents (HDD). For the remaining product groups covered by the EU Ecolabel, no proposal is made in terms of criteria related to micro-organisms due to the fact that no products containing micro-organisms could be found on the market.

The criterion text proposed was elaborated based on consultation with stakeholders, review of scientific literature, available legislative tools and other ecolabelling schemes. As the inclusion of micro-organisms in consumer non-food stuff products is still relatively new, no specific legislation exists ensuring their safety and no standards have been developed to assess their efficacy. Due to this, the proposed criterion is centred on these issues.

***Identification*:** in order to ease the assessment and verification, the identification of the strains of micro-organisms present can be done multiple ways:

- American Type Culture Collection (ATCC) number,
- International Depository Authority (IDA) number,
- listed with the World Federation of Culture Collections (WFCC),
- DNA is identified according to a "Strain identification protocol" (e.g. using the 16S ribosomal DNA sequencing).

The first two options offer an ease of verification as the applicant would only have to provide proof of the micro-organisms having an ATCC or IDA number and the Competent Bodies would be able to verify this with the respective database.

***Safety*:** two EU legislative pieces of text consider the case of micro-organisms and it is proposed to rely on them - the Directive 2000/54/EC - biological agents at work and the Qualified Presumption of Safety (QPS) list issued by the European Food Safety Authority (EFSA).

***Absence of contaminants*:** in order to ensure that there are no contaminants and following quality management, it was proposed by some stakeholders to request the applicant to show that their company is certified according to ISO9001. While many European companies hold such a certification, it might be a burden for SMEs, thus it is proposed to rely on the testing of the product formulation for pathogens. The list of pathogens is based on the one found in Nordic Swan and Ecologo (Canada).

GMOs: as indicated in [55], there are no known cleaning products containing genetically modified micro-organisms on the market, but due to concerns of potential significant user exposure (as these types products could be used on a daily basis) and unknown potential risks, it is proposed to ban the use of GMO micro-organisms.

***Antibiotic susceptibility*:** as micro-organisms are present in the products, it might come to pass that these micro-organisms should be removed from their environment for one reason or another. Thus it is necessary to ensure that there are antibiotics that will be adequate for this task. While some stakeholders proposed to use a loose wording that would not indicate which types of antibiotics and biocides the micro-organisms should be susceptible to, the criterion text indicates the five main ones, similarly to what is found in other ecolabel schemes.

Microbial count: in order to ensure that the product is effective, it must be tested using the Fitness For Use criteria described but the protocol listed there would be sufficient to guarantee that the included micro-organisms have a use. Nordic Swan requires tests to be performed to show that proteins, starch and fats are digested by the micro-organisms along with a minimum microbial count. In the proposed criteria, only a minimum microbial count is requested, as multiple types of products are covered the product group and each has specific requirements in terms of soils they remove, as indicated in the Fitness For Use protocol. A minimum microbial count ensures that there are sufficient micro-organisms present in the product and multiple values were proposed by stakeholders ranging from $1x10^4$ to $1x10^8$ CFU, with the value of $1x10^5$ CFU being the most commonly cited.

Shelf life: as micro-organisms are an essential part of the cleaning mechanisms of the products and are living beings, it must be ensured that they do not die off too soon and before the user has a chance of using the product. A shelf-life of 24 months is sufficient to accommodate for transport, storage at a vendor's facilities

and storage before use by the final consumer. This shelf-life should be made known to the user (thought the label) but should also be demonstrated by the fact that the microbial count throughout does not decrease toward the end of that shelf-life.

***User information*:** Section 8.18 presents the information that should be provided to users on all hard-surface cleaning products but it is also proposed that the users of products that contain micro-organisms should also be made aware of extra information, especially information dealing with the avoidance of potential health hazards (contact with food, the non-use of spray triggers in order to avoid airborne micro-organisms that can cause irritations). A clear indication on the shelf-life of the product is also proposed in order to ensure that it is still effective.

8.12.12 Sub-criterion (i): Corrosive substances

8.12.12.1 Summary of comments and further information on enzymes

Corrosive properties are assigned to chemicals (mainly acids and bases) that can attack and chemically destroy exposed body tissues, therefore it is considered of relevance the inclusion of this criterion for the hand dishwashing detergents.

No comments were received on the corrosive subtances criterion and therefore there are no proposed changes to this criterion in this revision, apart from those due to entering into force the classification in accordance with Regulation (EC) No 1272/2008 (CLP Regulation).

Common text proposal – Corrosive substances
The product shall not be classified as a 'Corrosive' (C) mixture with H314, or as a 'Skin corrosion, categories 1A, 1B, 1C' mixture in accordance with CLP Regulation.
Assessment and verification:
The applicant shall provide the exact concentrations of all ingoing substances used in the product, either as part of the formulation or as part of any mixture included in the formulation, that are classified as 'Corrosive' (C) with H314 in accordance with CLP Regulation to the competent body. Declaration should be supported by the material safety data sheets.

8.13 Packaging

Common text template – PACKAGING
(*) Weight/utility ratio (WUR) The weight/utility ratio (WUR) of the product shall be calculated for the primary packaging only and shall not exceed the following values for the reference dosage: Plastic/paper/cardboard packaging containing more than 80 % recycled materials is exempted from this requirement. *Assessment and verification:* The applicant shall provide the calculation of the WUR of the product. If the product is sold in different packaging (i.e. with different volumes), the calculation shall be submitted for each packaging size for which the EU Ecolabel shall be awarded. In the case of trigger sprays and the allocation of weight to the primary packaging, this shall be on the basis of pan-European sales data for the product, indicating unit sales of each. The WUR is calculated as follows: $WUR = \sum((W_i + U_i)/(D_i * R_i)$ Where: Wi: weight (g) of the primary packaging (i), Ui: weight (g) of non-recycled packaging in the primary packaging (i). Ui = Wi unless the applicant can document otherwise, Di: number of reference doses contained in the primary packaging (i), Ri: number of times that the primary packaging (i) can be refilled and used for the same purpose. Ri = 1 (packaging is not reused for the same purpose) unless the applicant can document a higher number. The applicant shall provide a signed declaration for the content of recycled material, along with relevant documentation. Packaging is regarded as recycled if the raw material used to make the packaging has been collected from packaging manufacturers at the distribution stage or at the consumer stage. Where the raw material is industrial waste from the material manufacturer's own production process, then the material will not be regarded as recycled.

Product type	WUR

(*) Design for recycling

Plastic packaging shall be designed to facilitate effective recycling by avoiding potential contaminants and incompatible materials that are known to impede separation or reprocessing or to reduce the quality of recyclate. The label or sleeve, closure and, where applicable, barrier coatings shall not comprise, either singularly or in combination the materials and components listed in Table 72. Pumps are exempted from this requirement.

Table 72. Materials and components excluded from packaging elements

Packaging element	Excluded materials and components*
Label or sleeve	- PS label or sleeve in combination material used with a PET, PP or HDPE bottle - PVC label or sleeve in combination with a PET, PP or HDPE bottle - PETG label or sleeve in combination with a PET bottle - Sleeves made of different polymer than the bottle - Labels or sleeves that are metallised or are welded to a packaging body (in mould labelling)
Closure	- PS closure in combination a with a PET, HDPE or PP bottle - PVC closure in combination with a PET, PP or HDPE bottle - PETG closures and/or closure material with density of above 1 g/cm3 in combination with a PET bottle - Closures made of metal, glass, EVA - Closures made of silicone. Exempted are silicone closures with a density < 1 g/cm3 in combination with a PET bottle and silicone closures with a density > 1g/cm3 in combination with PEHD or PP bottle - Metallic foils or seals which remain fixed to the bottle or its closure after the product has been opened
Barrier coatings	Polyamide, EVOH, functional polyolefins, metallised and light blocking barriers

* EVA – Ethylene Vinyl Acetate, EVOH – Ethylene vinyl alcohol, HDPE – High-density polyethylene, PET – Polyethylene terephtalate, PETG – Polyethylene terephthalate glycol-modified, PP – Polypropylene, PS – Polystyrene, PVC – Polyvinylchloride

Assessment and verification:

The applicant shall submit a signed declaration of compliance specifying the material composition of the packaging including the container, label or sleeve, adhesives, closure and barrier coating, as appropriate, and a sample of primary packaging.

8.13.1 Feedback from stakeholders following 1st AHWG meeting

Table 73. Stakeholder comments regarding packaging

Product groups	Comment area	Stakeholder comments	IPTS analysis and further research
LD/ IILL/ DD/ IIDD	Packaging	Keep the current criterion.	**Comment accepted.**
LD	WUR	The values vary very much some are just below the limits but others have values as low as 0.31 for professional products sold in bags values are even lower because they are sold in large amounts. Small boxes with only 20 capsules have the most difficulties passing. 1l bottles of super concentrated products pass quite easily as well. This a criterion where a point system could reward the frontrunners. Do we want the small boxes with only 20 capsules ecolabeled (see comments below regarding risks for children and animals)?	**Comment acknowledged.** This comment is in line with what is observed in general – uni-dose products are towards the higher end of WUR values. It is, nevertheless, difficult to propose drastic cuts in WUR as only primary packaging is assessed and if primary packing is too flimsy, then manufacturers might tend to overcompensate with secondary packaging.
LD	Packaging	Super-concentrated products are now at the market. This should be investigated further.	**Comment acknowledged.** More concentrated products can be favoured with lower WUR values. In this revision, it is proposed to align all WUR values for laundry detergents, thus lowering the ones for liquid, tablet and other unidose systems.
APC	Packaging	Good professional products normally have higher contents of active material in the formulation than the domestic ones, when high performances are demanded. That means that the weight of the primary packaging is normally higher for professional products than the ones for domestic cleaning. The WUR looks OK for the packaging from 10 liters up but the WUR should be a little higher for the 5 liters and a little more for the 1 liter packaging. This only for the undiluted products. We suggest a WUR of 1.4 for the 5 liters and 1,6 for the 1 liter for the PE packaging. This weight avoids shrinkage even for concentrated products.	**Comment partially accepted.** The WUR is proposed to be increased to undiluted products as currently they would have a dilution rate of 1:125 in order not to be at a disadvantage compared to RTU products. The issue of shrinkage was not considered during the revision but the additional WUR allowance should allow professional-grade products to pass the packaging criteria with sturdy packaging.

APC	Summary / WUR	I presently have a «exemption» from AFNOR for using packaging that dont respect the RPU limits. This exemption was accepted because the conclusion was that it is not ecological to promote the sales of products «ready to use» rather than concentrated product. My example is for one of our product that we sold in concentrate (to dilute 1/30). If I did the calculations, I can use 30X1.2g = 36g of plastic to bottle 1L of my product. If I choose to sold the same product in RTU form, I can use 10X15g = 150g of plastic to bottle 1L of my product...I can't sold 1 bottle of my concentrated product(impossible to have a 1L bottle that weigth 36g) but I can sold 30 bottles of the same product in the RTU form. We think that the RPU limits for the concentrated products has to be the same than if the product were in RTU form (150g/L). I can't find any discussion about that in the draft	Comments partially accepted. The WUR is proposed to be increased to undiluted products as currently they would have a dilution rate of 1:125 in order not to be at a disadvantage compared to RTU products. While not on a 1:1 ratio (as the aim of the criterion is also to encourage products to become more and more undiluted), the proposed WUR thresholds should allow products with a dilution rate of 1:10 to pass the criterion.
APC	WUR	There are four issues in the new criteria I like to rephrase to make the criteria more environmental friendly and keep focus on improvements: 3) Packaging WUR This alternative dilution (explained in the CDV section) alternative can be used for calculating the Packaging WUR.	
APC	Packaging	We ask that if a product is classified as H314 “Causes severe skin burns and eye damage” sprayheads are only allowed in case they are designed in a way that they prevent the formation of aerosols.	**Comment rejected.** It is not the primary objective of EU Ecolabel to concern itself with Health and Safety issues, rather than environmental impacts. However, where such issues can be co-managed, they should be addressed. In the case of potential aerosols of materials subject to risk phrase H314, limited research and consultation suggests that such substances are limited and alternatives have been found in liquid products. Although the same may not be the case for solid products, this format cannot in any case form aerosols. Any residual risks in use should be managed by user instructions, which ought already to be the case for professional products.

APC	WUR	Part a) This could be more clear. When a refill has to be provided, should it be available in every country where the product is placed on the market or could the refill be only available in one of the 2 countries where the product is sold? Should every distributer have to provide both the normal bottle and the refill? Or should both products be sold together? This should be made more clear. Part b) The criterion should be clarified: How should it be calculated when a box of trigger products is sold with only 1 trigger head. Is the trigger reused once or 6 times? Examples could be prepared for the user manual.	**Comments partially accepted.** For Part a),-> "Spray bottles and availability of refills". It is proposed that the presence of the refills on the market is enough and the trigger sprays must not necessarily be sold in a pack with refills. As documentation proving the presence of refills on the market, it is proposed to accept sales figures. For Part b), for a proposal for the calculation of the refillability, see Section 8.13 below.
APC	Packaging	Concernant l'obligation de proposer des eco-recharges pour les sprays, nous avions démontré par le passé à l'AFNOR qu'il n'y avait pas de marché pour les recharges spray car les consommateurs ne sont pas prêts à acheter ces produits. En effet toute notre gamme de recharge pour spray se vend qu'en quantité très faible depuis sa création. Nous ne souhaiterions donc pas que ce critère soit conservé.	**Comment rejected.** Trigger sprays contribute a significant amount to overall packaging weight and it is already proposed to make it easier for them to be awarded with the EU Ecolabel by increasing the WUR. The requirement that refills should be present on the market is not proposed to be removed as if they are not, customers will never get accustomed to using them.
APC	WUR	Part b) Should the same limits be set for consumer and professional products? Professionals often offer 5L refills which makes it quite easy to pass but for consumers this is not a possibility. Different limits for professional and consumer products seem a way forward.	**Comment acknowledged.** For simplicity and because of the lack of data, no fundamental change is proposed. The EU Ecolabel does not seek to encourage use of trigger sprays in domestic products not part of a refillable system.
HDD	WUR	The proposed limit is extremely easy. Even very small promotion samples can pass this criterion. The WUR calculation should be made more clear, for example by providing examples in the application pack.	**Comment accepted.** The WUR for HDD has been updated based on data received from a stakeholder. Note has been made to include examples of WUR calculations in the User Manuals.
HDD	Packaging	Keep the current criterion.	**Comment acknowledged.**
HDD	Packaging	There is no reason to allow oversized packaging only because it is made of recycled material.	**Comments accepted.** It is proposed to only keep the exemption for packaging containing 80% recycled material. "Recycled material" is to be understood as post-consumer
ALL /	Packaging	We are fully in favour of improving the environmental	

IILD		performance of the packages by promoting reduced use of materials, a minimum amount of recyclable and recycled material in packaging. However, as packages are different according to the product group, it would not be relevant to set common criteria especially for APC. Indeed, the amount of recycled material will be more easily achievable for paper and cardboard whereas it might be more difficult e.g. for PE. While a common criterion for all packaging material will not be possible, we suggest setting different percentages of recycled material according to the material used. For instance, BEUC and EEB propose to require 80% of recycled material for PET and Paper/cardboard.	or collected at the distribution stage. See Section 8.13 below for further discussion on this issue.
ALL	Packaging	The sentence "from sustainable sources" should mention expressly also "recycled" materials.	
ALL	Definition	There is no definition of sustainable sources.	
LD / DD / APC	Packaging	We favour first of all the reuse, secondly the reduction and finally the recycling of packaging. Including plastics form sustainable sources doesn't seem to be the right way forward.	
ALL	Packaging	As for other materials Industrial waste should not be included in the scope. In plastics, especially this type of packaging, the industrial waste recycling is not defined as recycling as the generated waste is directly reuse in the same process.	
LD / DD / APC	Packaging	We support this criterion in principle. Since EU Ecolabel products should set the best example. Because they are only a small portion of the waste fraction to be recycled, this criterion might have very limited added value for the environment in practice. But the EU Ecolabel has trendsetting role ,which the environmental market leader should be.	
All / TA	Packaging	Some requirements on the Body of the packaging should be added. Example: Body: The body of the packaging should be composed of one material (monopolymer). The used material should be transparent or light-coloured.	**Comment acknowledged.** While the commentator's proposal might promote easier recycling, packaging does represent a small portion of the environmental impacts and the EU Ecolabel should concentrate on imposing limits on other areas where the impacts are greater. An effort is already asked from applicants to facilitate recycling through the "design for recycling" requirement found in all packaging criteria.

All / TA	Packaging	Our view is that, except for the soluble films, everything that constitutes packaging (carton, plastic bags,…) should contribute to the packaging load.	**Comment acknowledged.** For simplicity's sake and because packaging has not been shown to play a major role in the impacts associated with detergents, secondary and tertiary packaging is not proposed to be considered.

8.13.2 Horizontal issues

Packaging is an increasing environmental concern as the average EU-27 citizen generated over 150 kg of packaging waste per year[1]. Despite this, it is a necessity as it greatly reduces damage to products from the environment and vice versa, allows for easier identification of contents and packaging labels provide information on ingredients, safety and dosage advice. In the case of detergents, packaging represents from 0 to 37% of a product's environmental impacts, depending on the product, packaging and environmental impact considered (cf. Section 4 of Preliminary Reports). This is not the most important environmental impact of a detergent's life cycle; nevertheless the environmental aspects linked to packaging have improvement potential and can be acted upon at EU Ecolabel level.

In Europe, the Directive on Packaging and Packaging Waste[2] is the main policy tool to harmonize national measures concerning the management of packaging and packaging waste to prevent and reduce their impact, thus providing a high level of environmental protection and to avoid obstacles to trade in the European market. It contains provisions on the prevention, reuse, recovery and recycling of packaging and so all of it should, for example:

- have weight and volume minimized to the amount needed for safety and acceptance of the packed product,
- be suitable for material recycling, energy recovery and composting or reuse if intended,
- be manufactured in a way which ensures any noxious or hazardous constituents should have minimum impact on the environment.

WUR – reduction of the amount of packaging

In packaging, every gram counts. Generally speaking, lighter packaging is cheaper to transport and store and its manufacturing and distribution require less energy and fewer raw materials. However there are trade-offs as reducing packaging too much can produce flimsy packaging leading to undesirable consequences such as product deterioration or spillage, uncontrolled dosing, etc.

The weight-utility-ratio (WUR) is a measure of the mass of packaging used to deliver a functional unit (i.e. a washing cycle). This indicator is used to limit the amount of packaging and consequently reduce the impact of producing packaging material and transportation. The indicator also promotes the use of recycled and renewable and sustainably sourced material in packaging and the reuse of packaging components. For each product group, proposals for WUR updates are discussed below in Sections 8.13.3 to 8.13.8.

Multiple questions were raised by competent bodies concerning the application of WUR and some of the factors within, those are described below.

Interpretation of *Ri* (refillability) and application of WUR

The question related to Ri (refillability) received a number of comments, especially on how it can be proved that a product can be and is reused. Following consultation with competent bodies who have experience with this criterion, it is proposed to base the calculation of Ri on sales data.

Indeed, companies keep track of their sales data as they are essential to their business. *Ri* is then calculated by comparing the sales of normal products (e.g. bottles with trigger sprays, laundry detergent bottles that can be refilled by consumers) with the sales of refill (e.g. refill bottle, pouches containing laundry detergent to be poured into the original bottle). In case a new product is seeking an EU Ecolabel award, Ri should be taken to be 1 unless the company can prove that a similar product has sales justifying using an Ri with a different value and after a year on the market, real sales data should be provided to the Competent Body.

In order to illustrate the calculation of WUR and Ri, let's consider the example of the following product:

Weight of main bottle (750ml)	300g

[1] http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Packaging_waste_statistics

[2] European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste, OJ L 365, 31.12.1994, p. 10–23

% of recycled material in bottle	20% (60g)
Weight of refill pouch (1,5L)	20g
% of recycled material in pouch	10% (2g)
# of bottles sold in 2014	14 million
# of refill pouches sold in 2014	9 million
# of doses in bottle	15

In this example, each pouch has a closing system and can be used to refill two bottles. As 9 million pouches were sold, theoretically bottles were refilled 18 million times. As 14 million bottles were sold and Ri=1 if a packaging is not reused, this means that:

$$R_i = 1 + \frac{18\,million}{14\,million} = 2{,}29$$

The overall WUR will be calculated as follows:

$$W_i = main\,packaging + \frac{refills\,made}{main\,bottles\,sold} * \frac{refill\,packaging}{how\,many\,refills\,in\,the\,refill\,packaging}$$

$$W_i = 300g + \frac{18\,million}{14\,million} * \frac{20g}{2} = 312{,}86$$

Wi is calculated using the weight of the main packaging and the refill packaging. In this case, refills were used 1.29 times (18/14) for every bottle sold but every refill pouch serves for two refills.

$$U_i = 240g + \frac{18\,million}{14\,million} * \frac{18g}{2} = 251{,}57$$

$$WUR = \sum (312{,}86 + 251{,}57)/(15 * 2{,}29) = 16{,}43$$

Such examples of calculations are proposed to be included in the User Manuals.

Recycled and sustainable packaging

In order to promote a reduced production of waste from packaging and the circular economy, it is proposed to encourage the use of packaging from recycled sources. In the current criteria, an applicant is exempt from the WUR portion of the packaging requirements if their product's packaging contains over 80% of recycled material. It is proposed to keep such an exemption. In other EU Ecolabels, the thresholds for recycled or certified wood fibres requirements are often set to 70% as this corresponds to thresholds found in existing FSC and PEFC certification schemes. Nevertheless, during stakeholder consultation, competent bodies stated that the verification of recycled material is often done through balance sheets and not through third party certifications, meaning that there is no justifiable need to lower the percentage threshold for the exemption.

During the first consultation with stakeholders, it was proposed that packaging from renewable and sustainable sources should also be counted towards an exemption from the WUR requirement or to lower the WUR, as it is currently the case of two out of the six product groups under revision. "Renewable sources" means sources that can replenish at a rate that is higher than that of consumption. "Sustainable souces" means sources that are gathered in a way that is respectful of the environment, economically viable and socially responsible. While the use of such materials does have environmental benefits when compared to the use of non-renewable or non-sustainable materials, it has been pointed out that it does not decrease the amount of packaging material in circulation and might even increase it, moreover recycling has also been shown to be a better end-of-life scenario than landfilling or incenerating (e.g. [66]). Thus, the current proposal only contains exemptions for recycled material.

Design for recycling
EU Ecolabel criteria should try to ensure the recyclability of various components of packaging. The best case is mono-material packaging. For packaging made of different materials, all materials in the packaging should be separable by hand (paper, cardboard, plastic, metal, glass) for sorting, or should be suitable for recycling. Packaging elements such as caps or labels also have to be considered to ensure that these elements do not pose difficulties in recycling processes.

Several stakeholders argued that in some cases it may be better to stay with multiple materials if this allows for material reduction, especially in countries with low waste recycling rates and a lack of recycling facilities. Nevertheless, it is agreed that Ecolabel should promote recycling as the best waste treatment and it is considered appropriate to set a requirement to guarantee recyclability of packaging. And even if multiple materials are used, it should be ensured that this design does not impede the recyclability of the packaging.

A table is proposed in each criteria set explaining which materials should not be mixed. No indications are given on the fact that all materials in the packaging should be separable by hand (paper, cardboard, plastic, metal, glass) for sorting as such a requirement would be difficult to verify. The requirement for the labelling of plastics parts has been removed in order to limit the number of requirements linked to recycling and recyclability and due to the fact that many recycling schemes use automated systems that do require the marking of plastic in order to separate polymers.

8.13.3 Laundry detergents: packaging

From a life cycle perspective, packaging is not the most important environmental impact for laundry detergents but can represent up to 33% of impact contribution for agricultural land occupation when non-recycled material is used in the packaging (Section 4.8 of the Preliminary Report), for example. It is therefore proposed that a criterion on packaging is kept present in the EU Ecolabel for laundry detergents.

Weight/Utility Ratio (WUR): Mixed feedback was received on the WUR values for laundry detergents. On the one hand, some stakeholders pointed out that rigid packages containing 20 capsules were able to fulfil the requirement, others points out that limits that are too strict might contribute to flimsy packaging or extra secondary packaging. In alignment with the criterion on dosage, it is proposed to have one WUR limit for all types of products, from powders to liquids to capsules, and for it to be equal to the current one for powder products – 1,20 g/kg wash. It is an ambitious limit for non-powder products but it is in accordance with the current market trends of more concentrated products (less product is needed to perform the same functions, thus more doses can be included in the same packaging, making the WUR easier to pass).

8.13.4 Industrial and Institutional Laundry Detergents: packaging

From a life cycle perspective, packaging is not the most important environmental impact for industrial and institutional laundry detergents. If the packaging is comparable to that of consumer laundry detergents, it can represent up to 33% of impact contribution for agricultural land occupation when non-recycled material is used in the packaging (Section 4.8 - Preliminary Report), for example. It is therefore proposed that a criterion on packaging is kept present in the EU Ecolabels for all laundry detergents.

Weight/Utility Ratio (WUR)
No changes are proposed to the WUR values as little feedback was received on this issue. In the current criteria, a provision is made for packaging that is made of more than 80% of recycled or renewable content. No specific definition is provided for what constitutes renewable content and stakeholder consultation yielded that not only was this a point of confusion, it could lead to bulkier packaging that would have to dealt with. Thus, it is proposed to only keep the exception for packaging containing more than 80% of recycled content, as at least this type of packaging takes old materials out of the system.

8.13.5 Dishwasher Detergents: packaging

From a life cycle perspective, packaging is not the most important environmental impact for dishwasher detergents but can represent up to 11% of impact contribution for agricultural land occupation when 20% of non-recycled is used in the packaging (Section 4.4 of the Preliminary Report), for example. It is therefore proposed that a criterion on packaging is kept present in the EU Ecolabel for dishwasher detergents.

Weight/Utility Ratio (WUR): In the current criteria text, the packaging requirement is indicated as a general limit for the amount of packaging that can be used per wash and a minimum requirement for 80% recycled cardboard, if it is used. It is proposed to the WUR for the packaging requirement as in the other EU Ecolabels.

The current limit for packaging is 2g/wash. Considering the calculation of WUR and the fact that a minimum of 80% of recycled cardboard is required, the equivalent WUR value is 2,4g/wash:

Current: $\frac{packaging}{\#\ doses} = 2\ g/wash$

WUR: $\frac{(packaging+(1-recycled\ content)\cdot packaging)}{\#doses} = 2 + 0{,}2 \cdot 2 = 2{,}4\ g/wash$

No specific limits are currently provided for rinse aids. As rinse aids necessitate lower doses than dishwasher detergents, it is proposed to use the value of 1,5 g/wash, which is aligned on the value required by Nordic Swan. During consultation with stakeholders, this approach and limits received favourable feedback.
Although the requirement for 80% of recycled cardboard is kept implicitly, as shown in the calculation above, it is proposed to be in alignement with the other EU Ecolabels and propose an exception for packaging containing more than 80% of recycled content. No proposal is made for exemptions for sustainably sourced packaging.

8.13.6 Industrial and Institutional Dishwasher Detergents: packaging

From a life cycle perspective, packaging is not the most important environmental impact for laundry detergents but can represent up to 11% of impact contribution for agricultural land occupation when 20% of non-recycled is used in the packaging (Section 4.4 of the Preliminary Report), for example. It is therefore proposed that a criterion on packaging is kept present in the EU Ecolabel for I&I dishwasher detergents.

Weight/Utility Ratio (WUR)
No changes are proposed to the WUR values as little feedback was received on this issue. In the current criteria, a provision is made for packaging that is made of more than 80% of recycled or renewable content. No specific definition is provided for what constitutes renewable content and stakeholder consultation yielded that not only was this a point of confusion, it could lead to bulkier packaging that would have to dealt with. Thus, it is proposed to only keep the exception for packaging containing more than 80% of recycled content, as at least this type of packaging takes old materials out of the system.

8.13.7 Hand diswashing detergents: packaging

From a life cycle perspective, packaging is not the most important environmental impact for laundry detergents but can represent up to 37% of impact contribution for agricultural land occupation when non-recycled material is used in the packaging (Section 4.4 of the Preliminary Report), for example. It is therefore proposed that a criterion on packaging is kept present in the EU Ecolabel for laundry detergents.

Weight/Utility Ratio (WUR): Mixed feedback was received on the WUR values for hand dishwashing, some stakeholders claimed that it was too strict while another said that it was too slack. The data received from a stakeholder with WUR values for products having been awarded the EU Ecolabel shows that many are well under the threshold value, with the highest being at 0,24g/l washing water. In terms of other ecolabelling schemes, Nordic Swan has a threshold of 0,15 for WUR but this is not directly comparable as the calculations are made with soft water and not water of medium hardness. Nevertheless, all this information would indeed suggest that the WUR should be lowered, especially if the packaging criterion is to be used in order to favour more concentrated products and lower the maximum recommended dosage.

Thus it is proposed to lower the WUR threshold to 0,25.

Moreover, the exception for packaging containing more than 80% of recycled content is proposed to be kept. No proposal is made for exemptions for sustainably sourced packaging.

8.13.8 Hard-Surface Cleaning Products: packaging

From a life cycle perspective, packaging is not the most important environmental impact for all-purpose cleaners but can represent up to 36% of impact contribution for fossil depletion when plastic packaging is use, for example. In the case of window cleaners, packaging has the largest environmental impact contribution overall. It is therefore proposed that a criterion on packaging is kept present in the EU Ecolabel for all-purpose cleaners and sanitary cleaners.

Spray bottles and availability of refills: Based on stakeholder feedback, the current criteria on spray bottles to be sold as part of a refillable system is interpreted different by different Competent Bodies. The wording has been changed so this requirement is understood to mean that refills must be available on the shelves and not that a bottle with a trigger spray should always be sold with at least one refill bottle. In order to document the presence of these refills on the market, it is proposed that Competent Bodies accept sales data showing that both the trigger spray bottles and the refill bottles have been bought by customers.

Weight/Utility Ratio (WUR): The WUR requirement was highlighted as quite problematic by multiple stakeholders.

During stakeholder consultation it was also pointed out that the current WUR requirements highly limit the ability of products sold in bottles with trigger sprays to be awarded with an EU Ecolabel, especially if they are sold in bottle sizes under 750ml, which is the case for many RTU products. Investigation of the issue showed that an average 750ml bottle weighs just under 39g and a 500ml bottle just under 34g. A trigger spray weighs around 24g (20g for one of the lightest one the market). If it is considered that the applicant cannot prove that the bottle equipped with a trigger spray will be reused, the WUR are as follows:

Bottle size	Weight	Trigger spray weight	WUR
500ml	34g	24g	232g
750ml	39g	24g	168g
1000ml	40g	24g	128g

Thus, with the current criteria limits, only the 1000ml bottle would pass the requirement with a documented reuse of 1. As it is difficult to prove that a bottle will be reused (even if refills are available on the market) for domestic products, it is proposed to increase the WUR requirement for RTU products sold in bottles with trigger sprays from 150g to 200g.

For undiluted products, it was highlighted that products would have to have a dilution rate of 1:125 in order to be on equivalent ground with RTU products. These types of dilution rates are extremely high, especially for products that are aimed at the general public. Since there are advantages in terms of lower transport and packaging emissions for undiluted products, it is proposed to favour undiluted products by increasing the WUR for them. With the current proposal, a dilution rate of 1:10 is necessary for an undiluted product not to be at a disadvantage compared to RTU products. This "minimum" dilution rate is also used in Criterion 1 on Toxicity to Aquatic Organisms.

Moreover, the exception for packaging containing more than 80% of recycled content is proposed to be kept. No proposal is made for exemptions for sustainably sourced packaging.

8.14 Sustainable sourcing of palm oil, palm kernel oil and their derivatives

Common text template – SUSTAINABLE SOURCING OF PALM OIL, PALM KERNEL OIL AND THEIR DERIVATIVES
Ingoing substances used in the products which are derived from palm oil or palm kernel oil shall be sourced from plantations that meet the criteria for sustainable management that have been developed by multi-stakeholder organisations that have a broad membership including NGOs, industry and government. *Assessment and verification:* The applicant shall provide third-party certifications that the palm oil and palm kernel oil used in the manufacturing of the product originates from sustainably managed plantations. Certifications accepted shall include RSPO (by identity preserved, segregated or mass balance) or any equivalent scheme based on multi-stakeholder sustainable management criteria. For chemical derivatives of palm oil and palm kernel oil, it is acceptable to demonstrate sustainability through book and claim systems such as GreenPalm or equivalent.

8.14.1 Feedback from stakeholders following 1st AHWG meeting

Stakeholder feedback	**IPTS analysis and further research**
The Palm oil shall be sourced from 100% certified sustainable palm oil from segregated sources. More over the following additional requirements should apply on the source: - No deforestation. Forests of high value, for conservation or carbon storage purposes, are protected. All new palm oil developments should be on land where biodiversity and natural vegetation are already highly degraded. - No new development on peat, regardless of depth The requirement on kernel oil and derivatives should be al least on the level of certification with mass balance. The requirement on kernel oil and derivatives should be at least on the level of certification with mass balance. The certification system RSOP has been effective since 2004 and provides different levels of traceability. However, the scheme has been heavily criticized by NGOs. Therefore it is not enough to require only RSPO certified segregated palm oil, but the requirement must be completed with the sentences about the rain forest and peat. As regards the kernel oil and derivatives there are additional parties involved which may complicate the situation and be the reason why the amounts of available certified kernel oil and derivatives is not high yet. We ask therefore JRC to investigate the situation carefully. Without demand there will be no increased access and the destruction of rain forests will go on. In Sweden have IKEA and the major grocery store chains decided to only use 100% RSPO certified palm oil in their private label products starting January 2015. You can find the palm oil policy of IKEA at http://www.ikea.com/ms/sv_SE/pdf/reports-downloads/how_we_work_with_palm_oil_IKEA.pdf	**Comments partially accepted.** Further research has been performed to follow up on the suggestions made by the stakeholders (see below).

BEUC and EEB welcome the criteria on the sustainable sourcing of palm oil, palm kernel oil and their derivatives. BEUC and EEB support the requirement for the manufacturer to provide third-party certifications that the palm oil used originates from sustainably managed plantations. In compliance with other national ecolabelling schemes like the Blue Angel, certifications accepted shall include Roundtable on Sustainable Palm Oil (RSPO), but also ISCC+ (International Sustainability & Carbon Certification), Rainforest Alliance, Roundtable on Sustainable Biomaterials (RSB). Therefore, we strongly call on the JRC to make further investigation on stricter types of tracing which would ensure a higher level of reliability. As the EU Ecolabel should only be awarded to the top 10% of the products, we believe that sticking to the stricter way of traceability would be the most appropriate. We appreciate the efforts made by the JRC to increase the use of substances from renewable sources to limit products' impact on the environment. We also recognize that the sustainable palm oil market is still underdeveloped and that the rarity of RSPO certified palm oil can trigger somewhat higher costs for manufacturers who would like to use it. The costs are however not immense. In 2013, the price of the book and claim was only 2-3 USD higher per ton compared with conventional palm oil, which meant a price about 0.3% higher than for conventional palm oil. For palm kernel oil, the equivalent price premium was over US $ 20 per ton, representing a 2.3% higher price. However, the book and claim system is considered to be very easy for companies to achieve. For example, BASF has already launched products with traceability. If small and medium-sized surfactant producers can deliver traceable products is difficult to predict. However, BEUC and EEB are concerned about the low level of traceability and claim of the Book and Claim system proposed by the JRC and supported by industry. Although manufacturers support sustainable palm oil and palm kernel oil plantations by buying their outputs, it remains very difficult to identify the authentic sustainable content of the palm oil when received by the manufacturers as this can be a mixture of oil coming from several mills. Even if the payment is received by the certified plantations, the impossibility to determine whether the received palm oil has been indeed sourced from sustainable plantations is a worrying matter of concern. Traceability of the ingredients is even more compromised when manufacturers buy from several raw material suppliers. The most relevant from a consumer's point of view is also making demands on physically certified palm oil (segregated or mass balance according to RSPO nomenclature). It is easier to communicate to a consumer that the palm oil used in that particular bottle he/ she purchased actually comes from a certified plantation.	
We recognize that Oil palm is an important driver of tropical deforestation and the expansion of oil palm imperils in both lowland rainforests and peat-swamp forests, which are, respectively, among the biologically richest and most carbon-dense ecosystems on earth is a serious problem. But we are not in favor of this criterion since we question that verifiability of the criterion by using the RSPO certification scheme. Below you can find 2 publications who support these doubts. See Pdf document.	
Concerne tous les référnetiels: Huile de palme avec engagement RSPO : Cette démarche engendre une hausse de coût supplémentaire importante pour les fabricants (environ 10% de surcoût par matière première). Nous ne souhaiterions pas aller vers ce critère pour les prochains textes	

8.14.2 Further research on biosurfactants and sustainability issues

Surfactants can either be derived from oleochemical or petrochemical sources, with different environmental impacts associated with both types of sources [67]. The environmental impact of surfactant origin was investigated in the sensitivity analysis conducted as part of the technical analysis presented in the Preliminary Reports (for example in Section 4.7.2 of the Handdishwashing Detergents reports). This study found that the natural land transformation impact category experienced the greatest change when replacing a surfactant of oleochemical origin with one of petrochemical origin. However, the study also found that the available life cycle data for surfactants was outdated and unreliable. Other studies have highlighted that, although some of the benefits of moving away from petrochemical-based ingredients may seem obvious, there are ecological, economic and social concerns surrounding their replacements (e.g. [68], [69]).

Palm oil, palm kernel oil and their derivatives, along with coconut oil, are commonly as raw materials for the surfactants used in detergent products. They can be used alone or mixed with petrochemical raw materials to form surfactants of mixed origin, which account for around 50% of the surfactants used in detergents and maintenance products in Europe [70] [67]. Currently the percentages of palm oil and coconut oil used are not known and largely depend on market availability and prices.

In terms of certification schemes, palm oil and palm kernel oil are covered by schemes such as the Roundtable on Sustainable Palm Oils (RSPO). While there has been some interest in sustainable coconut oil, so far there are no large-scale schemes for certifying this type of oil.

CEN initiative on biosurfactants

Recently an initiative has been started by the European Committee for Normalization CEN/TC 276 on Surfactants on bio-surfactants. The Commission gave to CEN an official mandate to develop a European Norm that will encompass defining bio-surfactants, setting minimum biomass content thresholds, recommending analytical methods for verification. Beside these elements, development of environmental but also societal criteria and a certification scheme (similar to RSPO) is considered [71].

According to data from CESIO surfactants made of petrochemical raw materials constitute around 50% of the market, surfactants from biomass based raw materials only 4% and the rest 46% are of mixed origin. The project team of the CEN proposed so far two possible options of setting the biomass threshold for surfactants. In the first option surfactants would be divided into bio-surfactants, bio-based surfactants category A and B and other surfactants depending on the content of biomass, as indicated below:

- Bio-surfactants: > 95 %
- Bio-based surfactants: 50 – 95 % (category A)
- Bio-based surfactants: 25 – 49 % (category B)
- 'Other' Surfactants: < 25%

In the second option, instead of bio-based surfactants category B, the group containing between 25 and 49% of biomass, would be called bio-derived surfactants. Other categories are the same as in the first option. At the time of writing, it has not yet been decided which of these options will be chosen and whether the thresholds cited above will be kept.

Other considerations of this initiative refer to including in the planned standard environmental and social criteria. Environmental criteria would cover for instance biodegradability. The possibility of linking with the work of the Product Environmental Footprint and setting LCA-based environmental criteria is also taken into account. Regarding both social and environmental criteria, considerations are made whether these should be mandatory or voluntary ones.

The planned standard shall be available by the end of 2016. Besides the work on bio-surfactants, also developments for other specific bio-based products are simultaneously conducted. They encompass bio-lubricants, bio-plastics and bio-solvents. Also ISO Technical Committee initiates working in the area of biosurfactants. Thus in the future, more harmonisation in this area is expected.

IPTS follows closely the development of the above-mentioned works, it seems however, that it will be premature to take into account its findings and the bio-based surfactants in the EU Ecolabel, as requested by some stakeholders.

Credibility of certification schemes

Feedback following the 1st AHWG meeting for the EU Ecolabels on detergents and the implementation of the EU Ecolabel on Rinse-off cosmetics has highlighted that there are concerns regarding the true sustainability of RSPO and other schemes' certified substances. For example, Green Peace, in its 2013 report, Certifying Destruction [72], heavily criticized the RSPO mechanisms as being insufficient to provide the fundamental protections necessary for forest and peatlands which may be converted to plantations. In the report, it estimated that RSPO-related activities resulted in disproportionate destruction of the forests and peatlands; most of this was attributed to poor traceability, as well as practices on the ground.

As pointed out by a stakeholder, IKEA have put in place a palm oil policy [73] that builds on RSPO adding various stipulations, as alternative schemes appear less credible in terms of scale:

a) That only segregated palm oil is used, that is certified palm oil that is physically separated from non-certified palm oil all the way from the certified mill to the end user.
b) No deforestation; forests of high value, for conservation or carbon storage purposes, will be protected. All new palm oil developments should be on land where biodiversity and natural vegetation are already highly degraded.
c) No new development on peat, regardless of depth.

It should be noted, however, that points (b) and (c) are still in development (e.g. a roadmap for (b) needs to be developed by the supplier with IKEA and put in place by the end of 2017). It is therefore not possible, as of this moment, to use the scheme.

The appropriateness and effectiveness of the Book and Claim approach was also questioned by stakeholders as effectively the surfactants contained in the final products are in no way guaranteed to come from sustainable plantations as the system does not follow the physical movement of the raw materials. It is, nevertheless, the least costly of the systems proposed by RSPO.

Assessment and verification

As a balance needs to be found in order not to excessively burden the applicants in the assessment and verification process and thus discourage the use of biosurfactants, it is proposed to keep the criterion and follow the assessment and verification that has been agreed upon for the EU Ecolabel for Rinse-off cosmetics.

Thus, the main certification scheme to be RSPO and its four different supply chain systems: Identity Preserved (IP), Segregated (SG), Mass Balance (MB) and Book & Claim (B&C). The first three systems follow physical movement of oil along the supply chain. B&C is a certificate trading system. It allows the producers who use palm oil, palm kernel oil or its derivatives to offset the physical oil by purchasing the equivalent amount of certificates, sold by the RSPO certified producers. In this system the amount of certificates for B&C can only be calculated in the year after the production. The period of the certificates trade ends in March of the following year, [74] and [75].

Therefore, regarding verification, as agreed for the Rinse-off cosmetics EU Ecolabel, a clarification is proposed to be added in the User Manual that:
1) For the application the applicant (manufacturer) shall provide the information that he is member of RSPO or Green Palm scheme.
2) In the year after the application (at the earliest after end of March) the applicant needs to provide the excel-sheet with the calculation of the amount produced and the certificates.
If the applicant buy surfactants (segregated or mass balance) delivery notes from the surfactant manufacturer can be directly provided.

8.15 Volatile organic compounds (VOCs) and solvents

Common text template – VOLATILE ORGANIC COMPOUNDS

Volatile organic compounds (VOCs)* shall not be present in quantities ≥1% by weight in products as used (e.g. after dilution, if applicable), unless otherwise specified in Table 74 for products with specific uses.
Volatile organic compounds shall not be present in quantities ≥ 12% by weight in products as sold (e.g. in undiluted form, if applicable), unless otherwise specified in Table 74 for products with specific uses.

Table 74. Specific VOC content limits depending on the cleaning products

Cleaning product	Limits by weight of VOC	
	As used	As sold
Window cleaner	< 3%	< 25%
Degreaser	< 3%	< 25%
Industrial and institutional hard surface cleaner	< 5%	< 25%
Bathroom cleaner	< 1%	< 25%

*VOCs means any organic compound having an initial boiling point less than or equal to 250°C measured at a standard pressure of 101,3 kPa or having at 293,15K a vapour pressure higher than 0,01 kPa, demonstrated through laboratory testing or calculation from records of the amounts of constituents used to make the product where volatile means vapour pressure > 0,01kPa at 293.15K

Assessment and verification:

For VOCs: a) test reports or b) list of the detergent ingredients and copies of the material safe data sheets of each organic volatile solvent together with details of the calculations of the total concentration of volatile organic compounds with a vapour pressure higher than 0,01kPa at 293.15K.

8.15.1 Feedback from stakeholders following 1st AHWG meeting

The EU Ecolabel criteria for All-purpose Cleaners include a requirement on the VOCs content that reads:

> "The final products of all-purpose cleaners and sanitary cleaners (as sold) shall not contain more than 6 % (by weight) of volatile organic compounds with a boiling point lower than 150 °C. Alternatively, for concentrated products to be diluted in water, the total concentration of volatile organic compounds with a boiling point lower than 150 °C shall not exceed 0,2 % (by weight) in the washing water. The final products of window cleaners (as sold) shall not contain more than 10 % (by weight) of volatile organic compounds with a boiling point lower than 150 °C"
>
> Assessment and verification: the applicant shall provide copies of the material safety data sheets of each organic solvent together with details of the calculations of the total concentration of volatile organic compounds with a boiling point lower than 150 °C.

No comments were received during the 1st AHWG meeting. However the comments collected in Table 75 triggered the research reported in section

Table 75. Stakeholder comments related to horizontal issue VOCs and analysis.

	Stakeholder feedback	IPTS analysis and further research
All	The proposed limits for VOCs are useless, these % are not usable in any formulation.	**Comment Accepted** VOC restrictions have been revised finding out that in comparison to other schemes most likely there was a mistake in the definition.

All	This proposal is equivalent to ban fragrances from this product group. We find this approach discriminating for Southern Europe countries, where perfume is a mandatory quality factor for consumers. We also think it would be more honest, transparent and logic to ban directly the perfumes instead of giving unfeasible limits.	**Comment Partially accepted** Fragrances are one of the most important functions of VOCs in cleaning products. Data show that fragrances amount for 12% of the VOC used in cleaning products as an average (Table 77) and that the current limits would allow the use of fragrances to certain extent. It should be kept in mind that fragrance is not contributing to the main purpose of cleaning products and restrictions can be applied without getting a lower performance of the product.
APC	The limits are not strict for APC and sanitary cleaners. I question if we aren't being again less strict on RTU products compared to undiluted products?	**Comment Accepted** Revised limits are proposed in line with other international schemes. They are applicable for RTU products. Undiluted products should be diluted in accordance with the recommended dosage before measuring Restrictions of VOC components through CDV criteria can be uncertain.
All	VOC limits: This alternative CDV and CDV limits can be used for calculating the VOC limits.	

8.15.2 Further research on the VOC content

VOCs are used in a variety of detergents and cleaners such as surface-active preparations (washing and cleaning preparations), polishes, washes and others [76]. VOC contents are relatively small, as there are many products with high consumption volumes and nearly no VOC (washing powder). However, in other products like soaps, liquid detergents or all-purpose cleaners VOC share is higher getting up to 20% (detail data of the average VOC content is provided in Table 76). The VOC content depends on the product type and form (solid or liquid) as well as the VOC function requirements.

Table 76. Average VOC content depending on the type of detergent/cleaner

Product	Average VOC content	Product	Average VOC content
All purpose cleaner	0-6%*	Glass cleaner	0-30%*
Bathroom cleaner	0-10%	WC cleaner	0-10%
Acidic cleaners	0-10%	II Acidic cleaners	0-10%
Floor cleaners	0-5%	Abrasive cleaners	0-10%*
Liquid cleaners	0-15%	Clear rinse	15-30%

VOCs have different functions when added to the detergents (See Table 77). Determining the function of the VOCs in the detergents is important to identify possible substitutes and alternative technologies.

Table 77. Total and relative quantity of VOC depending on their functions

	Aerosol	Solvent	Preservation	Fragrance	Disinfection
Kt	10	110	<1	20	30
%	5.8	65	<0,5	12	16,7

Aerosols are widely used in sprays in household products such as bathroom and kitchen mouse products, oven cleaners or other products. A possibility to avoid or to reduce VOCs in cleaning products is to change the application form. Sprays alternatives are already on the market, e.g. system with a pump mechanism, systems with compressed gasses and alternative application products (not-in-kind alternatives). In combination with mechanical devices (cloth or brush) a reduction of the use of VOC-cleaning products is possible. The suggested alternatives are included in Table 78

Table 78. Possible alternative to detergent forms that are no-VOC or low-VOC content forms

Product	Not-in-kind alternatives	Product	Not-in-kind alternatives
Liquid detergent	Powder detergent, tablets	Liquid furniture detergent	Paste form
Washing up liquid	Powder, tablets, paste form	Spot remover liquid	Powder, paste form

Another essential function of the VOC is as solvent. Solvents are used either to assist in the cleaning action or to provide solvency for other ingredients. Although, the most widely used solvent is water; organic solvents may also be included. Re-formulation or new formulation is the alternative: a product reformulation typically consists of developing VOC-free products by modifying the chemical composition of the product. Reformulation also involves a substitution of VOC with less photo chemically reactive compounds while maintaining the products integrity. Possible alternatives are use of non-VOC or low-VOC solvents, avoidance or reduction of VOC-preservatives, avoidance or substitution of VOC-fragrance (especially terpences) and substitution of VOCs with high ozone building potential (eg n-propyl alcohol with isopropyl alcohol)

A third function of the VOCs is to serve as fragrances. Fragrances have no cleaning effect but they are responsible for the good odour of the product. Therefore an avoidance or substitution of VOC fragrances does not affect the quality or function of the product. According to this study [77], most of the VOCs are included in the fragrances and producers are not obliged to disclose the composition of fragrances. This statement is confirmed by other publications that highlight the importance of the VOCs in the scented detergents. Specifically, it is pointed out that VOC fragrances can be used in the laundry detergents for consumers, cleaning products (APC) [78] and some hand dishwashing detergents.

VOC emissions from all-purpose cleaning products are fairly significant in comparison to other household products. This release into the air is especially important for the working staff or private end users that are largely exposed when using the products marked with an asterisk in Table 76. Regarding the chemical nature of the VOCs glycols (butyl glycol, propylene, dipropylene glycols), benzyl alcohol (general purpose cleaners), aliphatics (furniture polishes), ethanol, isopropyl alcohol, n-propyl alcohol, phthalates, pethylethylketon, petroleum ether, butyl acetate, fragrances (terpene) and acetic acid are of major importance. Up to 133 VOCs is the number of substances that can be emitted from detergents [79].

The European cleaning industry showed a use of above 600kt VOC in 2000. Alternatives to cleaning products with less or no VOC typically lead to lower production costs and can increase profits. Therefore, it can be expected that with ongoing research and substituting mechanisms about 20% of VOC reduction can be achieved without regulatory approaches and furthermore if policy tools are implemented. However, for a proper implementation of policy tools that enhance VOC reduction as well as to clearly refer to VOC containing products one has to define VOC first.

Table 79. Main VOC definitions and measurement methods

Source	Definition	Measurement method
International schemes		
EPA [80]	Any compound of carbon, excluding CO, CO_2, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. Test methods in the approved State implementation plan or 40 CFR Part 60, Appendix A*	Reference Method 24: Determination of Volatile Matter Content, Density, Volume Solids, and Weight Solids of Surface Coatings and Reference Method 24A: Determination of Volatile Matter Content and Density of Printing Inks and Related Coatings (RM24 and RM24A).**
Environment Canada	VOCs that participate in atmospheric photochemical reactions, excluding the following in this link [81]	
Health Canada [82]	Organic compounds containing one or more carbon atoms that have high vapour pressures (boiling points roughly in the range of 50 to 250°C) and therefore evaporate readily to the atmosphere. It excludes photochemically low-reactive compounds such as CH_4, C_2H_6 and CFCs. Environment Canada defines VOCs under Schedule 1 (item 65) of the Canadian Environmental Protection Act, 1999 [83] For indoor environments, VOC means any carbon-containing compound that evaporates easily at room temperature, including exempt compounds because these have the potential to adversely impact the health of people that are exposed, despite their negligible photochemical reactivity (see Appendix A).	
US, California's Air Resources Board (ARB)	P_{vapour} < 0.1 mm Hg at 20°C or boiling points that are >216°C, determined by CARB Method 310, as exempt, low-vapour pressure (LVP) VOC, meaning these are not counted in calculating the VOC content of the products.	ARB Method 310, Determination of Volatile Organic Compound (VOC) in Consumer Products and Reactive Organic Compounds in Aerosol Coating Products
WHO [84]	any organic compound whose boiling point is in the range from (50°C to 100°C) to (240°C to 260°C), corresponding to having saturation vapour pressures at 25 °C greater than 100 kPa.	ISO 16000-6
European Union		
Solvent Emission Directive 1999/13/EC	any organic compound having at 293,15 K a vapour pressure of 0,01 kPa or more, or having a corresponding volatility under the particular conditions of use. For the purpose of this Directive, the fraction of creosote which exceeds this value of vapour pressure at 293,15 K shall be considered as a VOC;	

Decopaint Directive 2004/42/EC	any organic compound having an initial boiling point less than or equal to 250°C measured at a standard pressure of 101,3 kPa; VOC content means the mass of VOCs, expressed in g/l, in the formulation of the product in its ready to use condition. The mass of VOC in a given product which react chemically during drying to form part of the coating shall not be considered part of the VOC content	VOC content: ISO 11890-2 VOC content where reactive diluents are present: ASTMD 2369
EU National Emissions Ceilings Directive 2001/81/EC	All organic compounds arising from human activities, other than methane, which are capable of producing photochemical oxidants by reactions with nitrogen oxides in the presence of sunlight.	
Austrian Solvent ordinance 1995	Any organic compound that has a maximum boiling point of 200C	
Swiss VOC ordinance	Any organic compound that has a maximum boiling point of 240C	
Germany, France, Italy and other Member States	Any organic compound having at 293,15 K a vapour pressure of 0,01 kPa or more, or having a corresponding volatility under the particular conditions of use.	
Ecolabel schemes		
Cleaning products Green Seal	All organic compounds that have a vapor pressure of greater than 0.1 mm Hg at 1 atm pressure and 20ºC. "VOC content" means the total weight of VOCs in a product expressed as a percentage of the product weight.	ARB Method 310
Cleaning products, Env Choice AU [85]	Any organic compound (compound which contains carbon) with a vapour pressure greater than 0.01 kPa at 1 atm and 20°C. VOC content of products will be calculated according to the content of ingredients that fit this definition.	

General cleaning products [86] Env Choice NZ	Means any organic compound which has a vapour pressure more than 0.1mm Hg at 25C. Organic compounds with a boiling point higher than 250C, measured at a standard pressure of 101.3 kPa, are not considered to be VOCs. For product for which the label specifies dilution with water prior to use, the VOC limit shall apply only after the minimum specified dilution has taken place. The minimum specified dilution shall not include recommendations for the incidental use of a concentrated product to deal with limited special applications, such as hard to remove soils and stains. VOC content for each raw materials, or individual ingredients in any intermediate raw material, should be calculated using data from the raw material supplier. The total VOC content of the product shall be determined by adding the proportional contribution of VOCs from each of the raw materials. Constituents added in quantities less than 0.5 % (by volume) of the total volume of the batch need not be taken into account in calculating the VOC content of the product unless they are known to be essentially volatile materials.	VOC content shall be measured by: - EPA Method 24-24A, 40 C.F.R., Part 60, Appendix A (1991), - Method 18,48 Federal Register 48, no. 202, October 18, 1983 - Method 1400 NIOSH Manual of Analytical Methods, Volume 1, February 1984, - EPA Method 8240 GC/MS Method for Volatile Organics, September 1986 or - as demonstrated through calculation from records of the amounts of constituents used to make the product.
Hard Surface Cleaners – Canada UL 2759	Any organic compound which participates in atmospheric photochemical reactions. It excludes those organic compounds, also referred to as "exempt" compounds that this standard designates as having negligible photochemical reactivity (see Appendix A).	CARB Method 310, modified not to allow exemption for fragrances. Organic compounds with vapor pressure less than 0.1 mm Hg and boiling points greater than 216°C as determined by CARB Method 310 are exempted.
Cleaning and Degreasing Biologically-based Canada UL 2792	Above definition and For indoor environments, VOC means any carbon-containing compound that evaporates easily at room temperature, including exempt compounds because these have the potential to adversely impact the health of people that are exposed, despite their negligible photochemical reactivity (see Appendix A).	VOCs shall have been determined using the following method-: CARB Method 310. Determination of VOC in Consumer Products, as last amended on August 6, 2010.
Paint and varnishes 2009/544/EC	Means any organic compounds having an initial boiling point less than or equal to 250 °C measured at a standard pressure of 101,3 kPa as defined in Directive 2004/42/EC. VOC limits relate to the ready to use product and so the maximum VOC content should be calculated based on any recommended additions such as colorants and/or thinners. For this calculation, data supplied by the raw material suppliers regarding solids content, VOC content and product density will be required.	Measured as "In-Can" VOC content of the liquid paint using a gas chromatographic direct injection method according to ISO 11890/2***
Blue Angel RAL-UZ 194 [87]	Valid for Hand Dishwashing Detergents, All-Purpose Cleaners, Sanitary Cleaners and Glass Cleaners No definition was found in the scheme although limits are set up based on the boiling point (<150C)	
APC ecolabel	No definition was found in the Decision although limits are set up based on the boiling point (<150C)	

* Where such a method also measures compounds with negligible photochemical reactivity, these negligibly-reactive compounds may be excluded as VOC if the amount of such compounds is accurately quantified, and such exclusion is approved by the enforcement authority.

**D1475 Test Method for Density of Paint, Varnish, Lacquer, and Related Products; D2369 Test Method for Volatile Content of Coatings; D3792 Test Method for Water Content of Water-Reducible Paints by Direct Injection Into a Gas Chromatograph; D4017Test Method for Water in Paints and Paint Materials by Karl Fischer Method; and D4457 Test Method for Determination of Dichloromethaneand 1,1,1- Trichloroethane in Paints and Coatings by Direct Injection Into a Gas Chromatograph

*** ISO 11890-2:2013 http://www.iso.org/iso/rss.xml?csnumber=37492&rss=detail Paints and varnishes - Determination of VOC content - Part 2: Gas-chromatographic method is one of a series of standards dealing with the sampling and testing of paints, varnishes and related products. It specifies a method for the determination of the VOC content of paints, varnishes and their raw materials. This part is preferred if the expected VOC content is between 0,1-15 % by mass. When the VOC content is greater than about 15% by mass, the less complicated method given in ISO 11890-1 may be used. This method assumes that the volatile matter is either water or organic. However, other volatile inorganic compounds can be present and might need to be quantified by another suitable method and allowed for in the calculations.

Table 79 shows all the definitions found out in the literature. There are three major groups:

a) based on their physic-chemical properties such as vapour pressure or boiling point. This is considered in the EU definition

b) based on their reactivity properties and capability to produce photochemical oxidants, and finally

c) based on the atoms of carbon and the function

The differences in the definitions mean that there are chemicals that are considered as VOCs in some schemes while there are not considered as VOCs in other schemes. The most remarkable differences can be found between the US definitions and the EU definitions [88]. The US requirements are more stringent than the EU ones. However, the consequences of the less stringent European definition makes more difficult to practice solvent cleaning in Europe.

The most common definition in Europe is the one stated in the Solvent Emission Directive (see Table 79). A number of Member States, however, have developed their own definition in specific contexts. All are based in the vapour pressure or the boiling point, not in reactivity as in US. Comparing the definitions of the above reported schemes and legislation the following conclusions ca be drawn;

- The US requirements are more stringent that the EU definition. Consequently, there will be compounds that are classified as VOCs in US that are non-VOCs in EU. The fact will have also an impact in the level of strictness when comparing the US and EU voluntary schemes and legislation.

- The current EU Ecolabel states the lower value of boiling point for what should be considered as VOCs. It seems that this value can be due to a typing mistake as it is not in line neither with mandatory legislation nor with the national definitions.

- The measure method is also important to be considered to estimate the amount of compounds that can be identified as VOC and the strictness of the scheme shows the level of ambition of the voluntary schemes and legislation previously commented. The amount of VOC in the cleaning products is reported mainly in % by mass and that the level of ambition depends on the type of cleaner. Direct comparisons between the schemes should be carefully considered as VOC content will vary depending on the applied definition and if they are measured in products as sold or as used (values are shown in Table 80). In general the limits vary

- from 0,2 to 1% in mass in RTU and from 6 to 12% in mass in undiluted products hard surface cleaners

- from 1 to 10% wt in window cleaners (products considered as RTU)

- around 0,2-1% wt in RTU sanitary cleaners and from 6 to 25% wt in undiluted sanitary cleaners.

Some schemes report two values regarding the level of dilution of the sold product while others indicate just one value for RTU products and the maximum and minimum dilution rate to be applied before measuring

Table 80. Comparison table of the level of ambition regarding VOC content limitation of different schemes.

<table>
<tr><th>Source</th><th>Level of ambition</th></tr>
<tr><td>US, California's Air Resources Board (ARB)</td><td>
<table>
<tr><td>Product Category</td><td>Effective Date</td><td>Limit (%)</td></tr>
<tr><td>Carpet cleaners (dilutable)</td><td>01/01/2001</td><td>0.1</td></tr>
<tr><td>Carpet cleaners (ready-to-use)</td><td>12/31/2010</td><td>1</td></tr>
<tr><td>General purpose cleaners</td><td>12/31/2012</td><td>0.5</td></tr>
<tr><td>Bathroom/Restroom cleaners (all forms)</td><td>12/31/2008</td><td>1</td></tr>
</table>
</td></tr>
<tr><td>Cleaning products Green Seal</td><td>The VOC content of the product as used shall not exceed the current regulatory limits of the CARB for its product category.
For glass cleaners the VOC content for the product as used shall not exceed the lower of:
- 1% by weight
- the current CARB regulatory limit.</td></tr>
<tr><td>Cleaning products, Env Choice AU [85]</td><td>The total amount of VOCs contained in the product must not exceed 3.0% by weight once diluted as per instructions</td></tr>
<tr><td>General cleaning prod [86]
Env Choice NZ</td><td>General Purpose Cleaning products must not contain:
a) halogenated organic solvents;
b) VOC in excess of 10% by weight.</td></tr>
<tr><td>Hard Surface Cleaners – Environmental choice Canada UL 2759</td><td>To be authorized to carry out the EcoLogo, all hard surface cleaners for household, industrial and institutional use must:
- not contain more than 1% by weight of VOC as used (eg after dilution if applicable) unless otherwise specified in this sections for products with specific uses
- not contain more than 12% by weight of VOC as sold (eg in concentrated if applicable) unless otherwise specified in this sections for products with specific uses
The specific requirements for products with specific uses are (by weight of VOC)
<table>
<tr><td>Cleaner</td><td>As used</td><td>As sold</td></tr>
<tr><td>Window and glass cleaner</td><td>< 3%</td><td>< 25%</td></tr>
<tr><td>Degreaser</td><td>< 3%</td><td>< 25%</td></tr>
<tr><td>Industrial cleaner</td><td>< 5%</td><td>< 25%</td></tr>
<tr><td>Bathroom cleaner</td><td>--</td><td>< 25%</td></tr>
<tr><td>Hand dishwashing detergents</td><td>--</td><td>--</td></tr>
</table>
Hard surface cleaners shall not be formulated or manufactured with solvents belonging to any of the following groups:
a) Aromatic solvents or halogenated solvents,
b) The following ethers or their acetates: ethylene glycol ethers and diethylene glycol ethers.</td></tr>
</table>

<table>
<tr><td>Cleaning and Degreasing Compounds: Biologically-based Canada UL 2792</td><td>The biologically-based cleaning and degreasing compound shall not contain more than the following levels of VOC:
a) 1% by weight, for biologically-based household cleaners and degreasers;
b) 1% by weight, for biologically-based facility maintenance cleaners; and
c) 5% by weight, for biologically-based parts cleaners.
For products for which the label specifies dilution prior to use, VOCs and surfactants should be measured after the minimum recommended dilution has taken place. The minimum recommended dilution shall not include recommendations for the incidental use of a concentrated product to deal with limited special applications, such as hard to remove soils and stains.</td></tr>
<tr><td>HHD, APC, Sanitary and Glass Cleaners Blue Angel RAL-UZ 194</td><td><table>
<tr><td>Cleaner</td><td>boiling point</td><td>As used</td><td>As sold</td></tr>
<tr><td>All-purpose cleaners</td><td>< 150 °C</td><td>< 0.2% (by mass)</td><td>< 6% (by mass)</td></tr>
<tr><td>Sanitary cleaners</td><td>< 150 °C</td><td>--</td><td>< 6% (by mass)</td></tr>
<tr><td>Glass cleaners</td><td>< 150 °C</td><td>--</td><td><10% (by mass)</td></tr>
</table></td></tr>
<tr><td>APC Ecolabel</td><td>The final products of all-purpose cleaners and sanitary cleaners (as sold) shall not contain more than 6 % (by weight) of volatile organic compounds with a boiling point lower than 150 °C. Alternatively, for concentrated products to be diluted in water, the total concentration of VOC with a boiling point lower than 150 °C shall not exceed 0,2 % (by weight) in the washing water. The final products of window cleaners (as sold) shall not contain more than 10 % (by weight) of VOC with a boiling point lower than 150 °C.</td></tr>
</table>

Regarding the information provided in the previous section, two main aspects of the criterion were revised:
a) The definition of the VOC content. After analysing Table 79, it seems that the current definition of VOC content is neither in line with other EU legislation nor with international standards. In more detail, the Decopaint Directive 2004/42/EC seems to provide the most updated definition for total content of VOCs and although right now this directive is not applied to detergents, the next revision is assumed to include more product groups. Timeline of that revision is, however, unclear.

Under Paints directive 2004/42/EC any paint or varnishes must not exceed the maximum VOC content limit value specified. The limit values are valid for the ready to use product. The VOC content is measured in Europe by direct injection into gas chromatograph in accordance with ISO 11890-2 or ISO 11890-1 if the VOC content is expected to be lower than 15% in mass. However, recently, for products that are containing 15% solvents or more, ISO 11890-1 method is accepted as an alternative method.

No international standards have been found for measuring the VOC content of the detergents and cleaners. Regarding this point and the inappropriateness of the ISO standards suggested previously for measuring the VOC content, a second method is proposed. This method is based on the amount of ingredients used to produce or manufacture the cleaner considering as VOC all the ingredients whose vapour pressure is higher than 0.01 kPa at 293.15K.

b) *the level of strictness of the criterion depends on the function of the cleaner*. Two different levels of strictness are developed in this revision. Firstly there is a general threshold for all cleaning products, unless otherwise specified. Secondly, there are two thresholds for each product type depending on its dilution. If it is a ready-to-use product, the limit VOC content is set up for the product as used. If it is an undiluted product, the VOC content limit is set up for the product as sold.

The assessment and verification of the criterion will vary depending on the measure of the VOCs. In this sense, if the VOC content has been measured through the test method specified in the standards and by using a chromatograph test, the applicant should provide the full test reports. On the other hand, if the VOC content is calculated based on the ingredients used, the applicant should provide the SDS of the ingredients or list of ingredients and respective content as well as the calculations.

The SDS information is regulated by the Annex II of the REACH and recently amended by the Regulation (EU) No 2015/830 [89]. This regulation lays down the requirements for the compilation of the SDS, used to provide information on chemical substances and mixtures in the European Union. Section 3 of the SDS shall describe the chemical identity of the ingredients of the substance of mixture, including the impurities and stabilising additives if they meet different criteria related to their hazardous properties. Section 9 of the SDS reports the physical and chemical properties of the product. This section shall describe the empirical data relating to the substances or mixture, if relevant. Among the data included in this section, the vapour pressure of the substances/mixtures shall be given. However, when the product is a mixture, the vapour pressure of the mixture is not the direct addition of the vapour pressure of the pure volatile compounds used as ingredients and therefore, this specific datum is of little relevance for the required calculations. Additionally, the % in mass of VOC content in the mixture can also be given in this section, but it is not mandatory.

Having these points in mind, it seems that the safe data sheet of the cleaners and detergents could be not enough to calculate the VOC content in the product and that a list of the ingredients plus the safe data sheet of each ingredient (to assess if they can be classified as VOCs or not) would be needed.

This criterion is complemented by the ban of using *aromatic solvents and halogenated solvents.* Aromatic solvents such as benzene, toluene or xylene and halogenated solvents such as dichloromethane, chloroform, carbon tetrachloride, 1.2-dichloroethane, chlorobenzene and similar ones are not widely use in the preparation of routine cleaners but they should be avoided in EU Ecolabel products due to their high environmental impacts. Most of them are considered ozone depleting agents and causing climate change. The environment impacts related to the use of halogenated solvents in cleaning applications (although not routine ones) has been studied from the economic point of view [90].

Many aromatic and halogenated solvents are also considered hazardous and toxic solvents that can be replaced in most of the cases with greener alternatives. This problem is recognized by several associations that prepared standard to reduce the amount of risk associated with exposure to hazardous air pollutants.

8.16 Phosphorus content

Common text template – PHOSPHORUS COMPOUNDS

(i) Excluded substances (no IIDD)
The product shall not be formulated or manufactured using any of the following compounds:
- phosphates

Assessment and verification:
The applicant shall provide:
a) a signed declaration of compliance supported by declarations from manufacturers of mixtures, as appropriate, confirming that the listed substances and/or mixtures have not been included in the product.

(ii) Restricted substances
The total content of phosphorus compounds in the product is limited to

Product/soiling	Light soil	Medium soil	Heavy soil

Or alternatively

Product/water hardness	Soft	Medium	Hard

Assessment and verification:
The applicant should provide written statement on compliance, including
a) information on the complexing agent in the product (detail information of the type of phosphorus-content substances added as ingredients)
b) information on the recommended dosage for different levels of soiling or water hardness (when applicable)
c) calculation of the product's total P-content
If the list of ingredients is confidential, the suppliers can send the information directly to the respective competent body.

8.16.1 Comments from stakeholders from the 1st AHWG meeting

The first criteria proposal for the revision of EU Ecolabel criteria for Detergents included a restriction on phosphorus by means of three simultaneous restrictions:

- ban for phosphates
- ban for phosphonates that are not aerobically biodegradable and
- limit on total amount of phosphorus. This approach followed the Detergent Regulation but it had a higher level of ambition.

During the discussions held on the 1st AHWG meeting, stakeholders remarked that it is very unlikely that industrial and institutional detergent discharges would reach the river without being previously treated in a Waste Water Treatment Plant (WWTP). They claimed that due to the unlikelihood of reaching surface waters and to their high performance properties phosphates for industrial and institutional detergents should be allowed. Additionally, another stakeholder pointed out that phosphonates are used in very limited amounts and that the requirement for biodegradability is not appropriate as they have been shown to biodegrade in river water but they often fail laboratory biodegradability tests. Finally, stakeholders commented the additional costs for the SMEs if these requirements were set up. Comments submitted through BATIS on this topic are shown in Table 81.

Table 81. Stakeholders feedback related to the phosphorus restrictions

PGs	Stakeholder's feedback	IPTS analysis and further research
Gen	We welcome the *ban of phosphates and phosphonates that are not biodegradable* as well as the limit of the total phosphorous amount in the six product groups.	**Comment Rejected** - phosphonates are non-biodegradable according to the lab tests. The proposed restriction will avoid the use of phosphonates in the detergents having good cleaning performance, what can be under certain conditions, a big disadvantage. - banning completely P-compounds in consumer products is too stringent and would create marked restrictions in some Member States.
	All P-components should be banned in consumer products	
	We are opposed to phosphonates exclusion	**Comment Accepted** See above
LD	Concerning the phosphorus compounds, *there already are on the market alternatives to phosphates and phosphonates as GLDA*, etc.	**Comment Accepted** The following findings are reported in section 8.16.2 - LDs are phosphate-free in EU due to the Detergent Reg. and there is already a large availability of phosphate-free and/or P-free products on the market - phosphonates contribute to less extend to P-content in wastewater than other P-compounds and are not biodegradable, not bio-accumulating and have good detergent properties. The good compliance with UWWT ensures that most of the P-content of the wastewater is removed
	Phosphonates from detergents are a very minor contribution to total phosphorus in sewage. Less than 1% of total sewage phosphorus taking into account other sources such as food wastes, water treatment, background and surface runoff, food industries etc. In sewage works, *80 – 97% of phosphonates are removed from water to the sewage sludge* (HERA report).	
DD	Dishwasher detergents will have to be phosphate free from January 2017. Since the criteria will be published before, the EU Ecolabel should not be less strict than coming mandatory regulation.	**Comment Accepted** The following findings are reported in section 8.16.2 - availability on the market of phosphate-free DD and market trends toward the production of phosphate-free and P-free DD have been identified
IILD IIDD	PAPA proposes to allow the use of phosphates in the IILD and IIDD product group. The rationale for this is provided in detail in the IIDD section, in the form of an attachment - please refer to this. This will also be provided separately to A. Boyano to ensure that it reaches JRC.	**Comment Partially accepted** The following findings are reported in section 8.16.2 - Professional detergents are a little share of the detergent market. Phosphorus contribution from this sector is significantly lower than from consumer products - phosphates and phosphonates are key ingredients to achieve good cleaning performance under hard performance conditions - good compliance of the UWWT: most of the industrial and institutional detergent wastewater will be treated in a secondary or tertiary treatment WWTP before discharging - poor availability of phosphate-free IIDD on the market what can create market restrictions if phosphates are banned in this type of products. - good availability of phosphate-free IILD on the market. Existing EU Ecolabel criteria for IILD already request phosphate-free detergents.
	Sewage treatment and its relevance to the unimportance of IIDD (IILD) to eutrophication are explained in the attachment	
APC	This statement is NOT TRUE in its current form. I am referring to the rationale provided under IIDD - Excluded Substances. This and other instances of this text need to be revised as they are biased and do not take into account the existence of sewage treatment.	**Comment Accepted** Further research on the connectivity to WWTPs demonstrates that a large European population is connected to WWTPs and that most of the urban population is connected with a WWTP with secondary or tertiary treatment that is able to remove large amount of phosphorus.
HDD	Are Phosphorus compounds allowed?	**Not relevant**

8.16.2 Further research on phosphorus compounds

The proposal presented in the TR1.0 suggested bans on phosphates, non-biodegradable phosphonates and limitations of P-compounds in each of the product groups. These ideas have been revised in the TR2.0 based on the data provided by the stakeholders and further research carried out by IPTS. The main findings are summarized in the coming sections.

8.16.2.1 Ban on phosphates

The first revised proposal for EU Ecolabel criteria for detergents suggested a general ban on phosphates. This proposal was based on the facts that:

- phosphates in the form of tri-poly-phosphate (STPP) is the *most commonly used compound of modern consumer and industrial and institutional detergents* due to its outstanding cleaning-enhancing properties and affordable price

- when phosphate detergents are used, *disposal of the wastewater is an issue*. The breakdown of the phosphorus complexes in detergent wastewater creates freely available phosphates that can contribute to an oversupply of phosphate in waterways and cause an imbalance of the aquatic ecosystem. Indeed, INIA model [91] assessed in 2009 that phosphates used in both *laundry and dishwasher detergents increase the likelihood of eutrophication in EU waters* by between 2.3 and 5.8%. Additionally, the Water Framework Directive implementation report [92], pointed out the eutrophication remained a major threat in about 30% of water bodies in 17 Member States. Untreated or insufficiently treated waste water discharges significantly contribute to these problems.

- the *ban on phosphates in consumer laundry and dishwasher detergents is in line with the aim of the Detergent Regulation 648/2004* [93] that set low P-content limits per dosage that does not allow the use of phosphate in the formulation of these detergents. The restrictions on laundry detergents are already in place and the restrictions on dishwasher detergents will come into force in 2017. A recent Communication of the European Commission [94] confirmed this limitation. From 2017 on Detergents Regulation (EC) No 684/2004 [3] will set up a restriction of 0.3gP/dosage on the total amount of phosphorus compounds to be used in Dishwasher Detergents that will prevent the use of phosphates. This restriction was revised and confirmed in 2015 through COM(2015) 229 [95]. The confirmation was based on a study that assessed the costs for the industry and consumers, availability of alternatives, cleaning efficiency of the detergents and the impacts on waste water treatment practices and efficiency as well as the overall health, environmental and socio-economic impacts to be expected by the time of entry into force of this restriction.

- apart from the above mentioned Detergent Regulation 648/2004 that bans the use of phosphates in laundry detergents and will do it in dishwasher detergents, *there are voluntary legislation and agreements to phase-out these compounds in consumer detergents*. The *current EU Ecolabel criteria* does not allow any phosphates, the *Nordic Ecolabel* criteria allows 0.2g P-compounds per wash, which for a dosage of 20g would allow approx. 4% phosphates (as STPP) in dishwasher detergents. *Many Member States have voluntary agreements in place limiting detergent phosphate level to the minimum necessary* for phosphates to play an effective role in the detergent. For example, Austria, Ireland, Denmark and Finland rely on voluntary commitments by detergents formulators to phase-out phosphate-based detergents. Since 2006, Czech Republic banned placing of laundry detergents with P-concentration higher than 0.5% wt on the market.

Considering these reasons, *it seems recommendable to keep the restriction on phosphates, at least for consumer products*. According a recent study carried out by Richard et al [96], *this measure will be in line with the regulation in many Western European Countries, Canada and Japan* that regulate the use of detergent products containing STPP as a measure to control eutrophication through reduction of P loading to WWTs and subsequent discharge to stems and rivers.

Regarding the content of total phosphorus in laundry detergents (and softeners), dishwasher detergents and cleaning products, the study found out that the amount of soluble reactive phosphorus (STPP) and total *phosphorus is quite different among* the detergents and even into one category among those detergents that are *Ecolabel awarded and those that are classified as regular ones*. For example, in regular laundry detergents the amount of soluble reactive phosphorus amounts for 0.13 mg/g while total phosphorus gets 1.61mg/g. This difference is much smaller for Ecolabel laundry detergents being 0.12 mg/g of soluble reactive phosphorus and 0.17 mg/g for total phosphorus. In the case of dishwasher detergents the highest

difference got a value of 1.23 mg/g for soluble reactive phosphorus and a value of 95.36 mg/g for total phosphorus. In the Ecolabel dishwasher detergents, soluble reactive phosphorus reaches 0.30 mg/g and total phosphorus amounts for 5.22mg/g. The differences in cleaning products are not significant and the total phosphorus only amounts for 0.65 mg/g. If it is considered that soluble reactive phosphorus can be attributed, to a large extend to phosphates, this study reveals how well the Detergents Regulation has shaped the market towards lower P-containing detergents.

This study, however, does not address the removal of phosphates in the UWWTs but it arises another point of discussion in favour the low P-containing detergents or P-free detergents. It notes that phosphates and especially STPP are important ingredients of modern synthetic *detergents which consume approximately 5% of total mine phosphate rock*. This reserve of the non-renewable resource of *phosphate rock is declining in quality and economic availability*, leading to phosphorus being added to European *list of critical materials in May 2014*. It also points out that it is important to reduce phosphorus usage in the full range of detergents to ease environmental impacts but also to preserve the long-term availability of phosphate rock [97].

However, stakeholder brought on the table the point that *phosphates can be an advantage if used in industrial and institutional detergents*. The reasons behind have been further investigated and the outcomes are:

- *Phosphates have unique detergent properties*. They are able to softener the water, adjust the pH, loosen of soil and keep the particles in suspension. These properties become especially *relevant when the detergents are used under severe conditions* such as very much shorter cleaning cycles (e.g. few minutes in professional dishwashers) or more severe demands for hygiene as it is the case of industrial and institutional laundry detergents. Additionally, personal information from the industry claims that the use of phosphates allows the reduction of the volume of water used per wash by up to a factor of two. This fact has a direct impact on the energy consumed by cycle since lower amount of water should be heated up.

- *Alternatives to phosphates* can be used also in industrial and institutional products as demonstrated by the existence of P-free detergents for professional laundry. However, for the time being this market sector is not well-developed and the alternative chemicals seem to be not so effective, especially in the case of IIDD. As an alternative to phosphates, manufactures can use a builder (e.g. MGDA or GLDA that are now implemented in consumer detergents), or combination of builders (there is no a single alternative that fulfils all the functions of phosphates), including zeolites (aluminosilicates), sodium citrate and nitrilotriacetate (NDA). These alternative builders also have environmental impacts and must be treated by WWT.

As commented, there is no a single substitute of phosphates and thus a combination of chemicals should be used. This increases the weight of chemicals to be discharged and treated in WWTPs and consequently the cost and potential environmental impacts if discharged without treatment.

- *Industrial and institutional detergents are mainly used in facilities that are connected to sewage treatment* (because they are mainly found in urban areas). This means that phosphates are not directly discharged in fresh waters or at least no before they are partially removed. In order to assess this argument data regarding the removal of phosphorus in WWTPs, the rate of removal, their costs and the connectivity across Europa were investigated.

- *Rate of removal of phosphorus in WWTPs*: the degree of removal of phosphorus from the water waste differs depending on the type of treatment in place. The three main processes used by wastewater treatment facilities to remove phosphorus from wastewater are physical, chemical and biological. While mandatory phosphorus removal requires the use of tertiary treatment, it is important to note that some phosphorus is removed in earlier steps of the wastewater treatment process. According to E-Water (2007) [98] and a recent study carried out by Bio [99] the P-reduction in a sewage treatment can reach are:

  - 5-15% in primary treatment that involves separating out heavy solids and oils
  - 50% in secondary treatment via biomass and/or portioning to solids (removing biological matter: dissolved and suspended).
  - >90% in tertiary treatment which consists of biological nutrient removal (BNR) or chemical precipitation.

This treatment involves the use of plants or algae, which involves a special group of bacteria which are able to accumulate a higher amount of phosphorus, and may take the form of constructed wetlands. The added biomass must be removed; otherwise the phosphorus will be rereleased into the environment upon decay. Chemical removal generally involves adding chemicals to the wastewater that form bonds with phosphate

and convert the phosphorus component into insoluble metallic phosphorus-containing compounds and the settle, becoming sludge. Calcium, aluminium and iron are the most commonly used chemicals [100].

The elimination of phosphates during WWTPs was found to be very high, even with high concentrations of added phosphonates [101]. For example, it is reported that 1-hydroxyethylidene-1,1-diphosphonic acid or [HEDP]-Phosphonate acid (CAS 2809-21-4), was eliminated up to 60% during the sedimentation (primary treatment) and 90-97.5% during the biological step with simultaneous $FeCl_3$ precipitation (tertiary treatment). Lower removal rates of 50-60% were found without iron addition.

Diethylenetriamine penta(methylene phosphonic acid (DTPMP CAS 15827- 60-8), has also be recorded and the removal reaches 95% within a biological step. After the precipitation step with aluminium sulfatate about 97% of the added DTPMP has been removed. Finally, other phosphonates that are also present in the influent of the WWTP reached a removal in comparison to the effluent of 85% for DTPMP, and elimination of NTMP and EDTMP got 80% and 70% respectively. Generally speaking, it can be said that in sewage works with tertiary treatment, 80-97% of the phosphonates are removed from water to the sewage sludge.

- *Connectivity to WWTPs across Europe* In 2005 Eurostat claimed an overall connectivity ratio of 66% of the population to wastewater collection and treatment (though this excluded indirect connections). At that point in time, it was reported that 46% of the population treated the wastewater by a tertiary treatment, 17% by a secondary treatment and 2% by a primary treatment. In 2007 EUROSTAT claimed that 90% of the EU-25 population was connected to sewage systems and the degree of population connected to public sewage treatment plants was roughly 80% as average. One of the first reviews assessing the implementation of the Urban Waste Water Directive (UWWD) [102] carried out in 2009-2010 [94] reported that most of the EU Member States collect their waste water in towns and cities with more than 2000 inhabitants at very high levels with an average rate of compliance equal to 94%. Some 15 Member States even reach compliance with 100%. All the Member States have maintained or improved the previous results. However, there are still countries where there is either no or only partial collection of sewage. 5 Member States still had compliance rates below 30% in 2009/2010

A total of 82% of the waste water in the EU received secondary treatment complying with the provisions of the Directive. Four Member States reached 100% compliance and another 6 Member States had level of compliance of 97% and higher. However, the compliance rate in the EU-12 Member States are trailing significantly behind with only 39% of their waste waters receiving appropriate secondary treatment.

The most recent review carried out in 2011-12 provided the following data :

- 90% of the EU population collects its waste water and applies on them a compliant secondary treatment (bearing in mind that we only take into account urban agglometarions with more than 2000 population equivalents and that there are still some Member States in the transitional periods, i.e. still without compliance obligations under their respective Accession Treaty (EU-15).

- 2% of the waste water is not collected but it is addressed thorugh individual systems (which should be equivalent to the application of a secondary treatement).

- 7,7% of the polluting load is collected but not adequately treated (not by a secondary treatment), eg it is discharged without being treated, or treated with primary treatment only, or treated with secondary treatment but with non-compliant results, etc.

- 0,3% of the waste water is not collected and not treated.

The compliance of the Directive is especially interesting in the case of big cities or big discharges as industrial and institutional detergents are mainly used in these areas. According to the data of the implementation report, the pollution load that is produced by these big cities alone is 45% of the total load collected. Approximately 91% of the pollution load receives more stringent treatment (BAT). This is an improvement in comparison to previous years although the degree of compliance varies significantly amongst big cities. To give an example, only 11 out of 27 capital cities of the EU Member States can claim "full compliance" in 2010 even with the most stringent treatment requirements, when applicable.

- *Cost of P-content removal for discharges* Specific data related to the cost of removing phosphorus from waste water were not reported in the reports checking the implementation of the UWWD or WFD. However, these reports pointed out the challenges faced for implementing their measures because of the financial and planning aspects related to the major infrastructure investment such as sewage system and treatment facilities.

Estimation of the costs of phosphorus removal in wastewater treatment facilities were calculated by Jiang et al [103] in 2004. The authors estimated the costs associated with wastewater treatment plant performance and different configurations. They came up with several cost curves for the removal of phosphorus, in principle, anywhere between 20-90%, for plants with capacities ranging between 1 and 100 MGD. They showed that prices decrease as long as the MGD increase and that the higher the % of phosphorus removal the higher the costs of the WWT. As an example, the minimum estimated cost is approx. $1\$_{2004}$/1000gallons for a capacity of 100MGD and a removal of slightly more than 20% to a max. cost of $6.3\$_{2004}$/1000gallons for a capacity of 1MGD and a removal rate of approx. 95%. From this removal value up, the costs are increased exponentially.

If these trends can be extrapolated to the European situation and to the refurbishment of WWT and not only to the construction of new plants, it seems clear that the higher the efficiency of the phosphorus removal treatment the most costly it is. Therefore, the implementation of tertiary treatment, needed for high degrees of phosphorus removal would also imply high investment and operational costs that can be avoided if P-free detergents are used.

- the *industrial and institutional sector contributes less than 5% of the industry detergents*. Data reported by Bio showed that from the total STPP consumption in 2008, 30% of the consumption goes to consumer dishwasher detergents, around 8% to industrial and institutional dishwasher detergents and around 60% to laundry detergents. These data remain stable for the period 2004-2007. If it is assumed that the production of detergents can be correlated with the consumption of detergents in Europa and their afterwards discharge, it seems that industrial and institutional dishwasher detergents amount for around 8% of the total. Data provided by the stakeholders reported that the industrial and institutional sector is a minimal part of the detergent industry (<5%) although no units were reported. Finally, these data are underpinned by a similar trend recorded in US. Porcella and Bishop [104] reported in 1976 that in the US in the 70s 80.6% of the detergent phosphorus came from household while 17.4% came from commercial/industrial usage (2% unclassified).

8.16.2.2 Ban on non-biodegradable phosphonates

Phosphonates are possible alternatives to phosphates. Phosphonates combine different functions in one molecule *providing all-in-one effectiveness at low concentrations to lower total detergent chemical load*. Their stability ensures reliable effectiveness at both low and high temperatures, dispersion capacity of soils preventing mineral deposits by modifying calcium salt deposit properties in very low amounts and are the most effective compounds to stabilise peroxide-based bleaches. They contribute *to achieve cleaning performance and hygiene with ecological wash programme* (lower temperatures and less intensive wash cycles, reducing energy consumption, water use and detergent doses.

The phosphorus in *phosphonates is not relevant to eutrophication.* Phosphonates are similar to phosphates except that they have a carbon-phosphorus (C-P) bond in place of the carbon-oxygen-phosphorus (C-O-P) linkage. Due to their structural similarity to phosphate esters, phosphonates often act as inhibitors of enzymes due in part to the high stability of the C-P bond. They adsorb very strongly onto almost all mineral surfaces in the pH ranges of natural waters. They also adsorbs onto natural materials such as sewage sludge, sediments and soils, especially with Ca

Regarding the *biodegradability of the phosphonates*, it is know that in nature bacteria play a major role in phosphonate biodegradation and due to the presence of natural phosphonates in the environment; bacteria have evolved the ability to metabolize phosphonates as nutrient sources. However, the poly-phosphonate chelating agents, mainly used in the detergents differ greatly from natural phosphonates because they are much larger, carry a high negative charge and are complexed with metals. *Biodegradation tests with sludge from municipal WWTPs with HEDP and NTMP showed no indication for any degradation based on CO_2 formation*. According to other studies, it is reported that in natural waters chelating agents and therefore phosphonates always occur in the form of metal complexes. Degradation is negligible in metal-ion free oxygenated solutions, but Ca, Mg, and Fe(II) brought about conversion to free phosphate at a rate of approx. 1%/day. *Phosphonates are however largely removed by adsorption onto the sludge and bacteria degradation under P-limited conditions* [101].

Many environments such as activated sludge, sediments and soils that act as a sink for phosphonates are not characterized by a lack of P most of the time. Because phosphonates are utilized almost exclusively as P-source, little biodegradation can be expected under these conditions. Simultaneous phosphate and

phosphonate utilization by bacteria can occur. Finally *adsorption of chelating agents by surfaces has been shown to decrease the biodegradability*. The easily biodegradable NTA for example is much slower degraded when adsorbed to mineral surfaces and it can be expected that phosphonates with their higher affinity to surfaces are much slower degraded in a heterogeneous compared to a homogenous system.

The *toxicity of phosphonates to aquatic organisms is low*. Reported values for 48h LC_{50} values for fish are between 0.1 and 1.1mM [101]. Also the bio-concentration factor for fish is very low. Phosphonates are poorly adsorbed in the gastrointestinal tract and most of the adsorbed dose was rapidly excreted by the kidneys. Human toxicity is also low which can be seen in the fact that phosphonates are used to treat various diseases.

Phosphonates are needed in detergents at doses which are an order of magnitude lower than for phosphates, which is why the P-limits in the EU Detergent Regulation effectively "ban" phosphates. Due to the lower amount of phosphonates, they have a minor contribution to total phosphorus in sewage, what is estimated to be less than 1% of total sewage.

8.16.2.3 Alternative chemicals to phosphorus compounds

Although many alternatives exist, there is no one widely accepted solution for phosphate replacement. These alternatives include chelating agents, dispersant polymers, surfactants and enzymes which are being suggested as the key to achieving phosphates-like performance in phosphate-free detergents. Zeolites are now used as a builder in almost all countries where STPP is no longer used in laundry detergents. Other chemicals include various builders and less than 5% of phosphonates and polycarboxylates. The builders that are used in phosphate-free detergents are mainly MGDA, GLDa, IDs(A) HEIDA, ASDA, sodium gluconate and sodium salts of citric acid.

Technical feasibility is confirmed for phosphate-free detergents by the fact that a large number of patents are placed on methods for replacing phosphates. Also by the fact that there are several P-free detergents for dishwashers and laundry at domestic and professional levels placed on the market. For example, in the Good Environmental Choice there are three products labelled, two from a small Swedish producer and one from Nilfisk-Advance, which is a very big company. Also, it seems that the performance of phosphate-free detergents falls into similar performance range based on cleaning efficiency for consumer detergents. Were almost no data found on the cleaning efficiency of phosphate-free detergents for commercial applications, but stakeholders pointed out that performance of phosphate-free detergents is lower.

8.16.3 Summary of the research and main points for drafting the common template for phosphorus compound criteria

Based on the above commented information and the information collected in section 8.16.2 on the availability of phosphate-free detergents and their performance, the EU Ecolabel criteria will be modified. In this revision it is **proposed to keep the ban on phosphates for consumer detergents** as it is already mandatory for consumer laundry detergents and will enter soon into place for dishwasher detergents. This measure aims at decreasing the amount of phosphorus in wastewater and the associated treatment cost as well as the risk of eutrophication of the European surface waters. Regarding the market availability, it is clear that this restriction will be applied to the largest share of the detergent market (consumer detergents) and the experience proof that no substantial costs or harm will be caused in the detergent industry. Additional, there is already large number of products on the market that claim to be phosphate-free and even P-free for these two types of detergents.

Regarding the industrial and institutional market, it is proposed to **allow the use of phosphates in IIDD.** Additional, it is expected that the use of phosphates does not cause serious environmental impacts as the wastewater of this type of detergents are treated in WWT which would have (in most of the cases) a secondary or tertiary treatment on place. This type of products amounts for a very little share of the market. Another reason behind this permission is the extreme conditions in which these detergents are used and the poor number of alternative products on the market.

The **ban on phosphates for IILD** is proposed to be kept as alternative chemicals are feasible. For the moment, there are licence-holders that prove the feasibility and good performance of this type of products.

The **ban on phosphonates that are non-biodegradable is proposed to be removed** from all product groups. Phosphonates are non-biodegradable compounds and this measure would imply the non-use of phosphonates. However, phosphonates will not be widely used as the phosphorus caps are kept as well as the criterion on the biodegradability of the detergent ingredients.

The **limits on phosphorus content for each of the product groups** were not largely commented. Therefore, only minimal changes are proposed in this technical report to make criteria ambitious but feasible at the same time. A summary of the proposed criteria and changes is summarized in Table 82. Generally speaking, the level of P-compounds proposed for each type of products depends on the likeliness of the discharges to be treated in a WWT, as it can be in the case of industrial or institutional detergents and the proportion of used. For example, consumer products are largely used while the market of industrial and institutional detergents is much smaller and widely concentrated in population nuclei.

Table 82. Criteria changes and no-changes proposed in the second revision of the EU Ecolabel for detergents

<table>
<tr><th>PGs</th><th>Criteria changes</th></tr>
<tr><td>General</td><td>Restriction on non-biodegradable phosphonates is removed.</td></tr>
<tr><td>HDD</td><td>No changes are suggested as no specific consideration of phosphorus is required</td></tr>
<tr><td>APCs</td><td>Ban on phosphates
Changes in limits include a ban on phosphorus compounds in domestic cleaning products, but allow phosphorous in industrial cleaning products up to a concentration of 0,5%wt. This will allow for using phosphonates</td></tr>
<tr><td>DD</td><td>Ban on phosphates
Remain the proposed limits on phosphorus content. These limits prevent the use of phosphates but allow the use of phosphonates at acceptable limits. The phosphorus compound limits are:
- 0,20 Pg/wash for dishwasher detergents and
- 0,30 Pg/wash rinsing agents</td></tr>
<tr><td>LD</td><td>Ban on phosphates
Remain the proposed limits on phosphorus content. that is 0,03Pg/kg laundry</td></tr>
<tr><td>IIDD</td><td>Removed the ban on phosphates
Phosphorus content limits are proposed to be kept. These limits are
<table>
<tr><td>Product type g/wash</td><td>Soft water</td><td>Medium water</td><td>Hard water</td></tr>
<tr><td>Pre-soaks</td><td>0,08</td><td>0,08</td><td>0,08</td></tr>
<tr><td>Dishwasher detergents</td><td>0,15</td><td>0,30</td><td>0,50</td></tr>
<tr><td>Rinse aids</td><td>0,02</td><td>0,02</td><td>0,02</td></tr>
<tr><td>Multicomponent system</td><td>0,17</td><td>0,32</td><td>0,52</td></tr>
</table></td></tr>
<tr><td>IILD</td><td>Ban on phosphates
Proposed limits on phosphorus appear reasonable. These limits are:
- 0,5Pg/kg laundry (dry weight) for light soil
- 1,0Pg/kg laundry (dry weight) for medium soil
- 1,5Pg/kg laundry (dry weight) for heavy soil</td></tr>
</table>

8.17 Fitness for use

Common text template – FITNESS FOR USE
No common template is possible

8.17.1 Comments from stakeholders from the 1st AHWG meeting

Several comments were received during and after the 1st AHWG Meeting. Comments during the 1st AHGW meeting are summarized in the Minutes report. In brief, they referred to the testing of all-purpose cleaners and the selection of the type of soiling to be tested, the influence of the active content, the lack and homogeneity among countries of reference products (especially if market leaders should be considered for IILD or IIDD). Table 83 reports the comments received after the meeting through BATIS.

Table 83. Stakeholders feedback on the criteria: fitness for use

		Stakeholder feedback	IPTS analysis and further research
ALL		In relation to the *use of a reference product* in fitness to use, it should be the *same product throughout Europe* because Ecolabel products are suitable for all Europe, due to the difficulty to choose a leader product to make comparison. We suggest as an alternative use, a *reference formula is described in a "Framework for testing the performance of ....."*	**Comment Partially accepted** Reference products are feasible/easier to be set up for those products where a washing performance standard has been developed: laundry detergents and dishwasher detergents. This is not the case for APC or HDDs. For some of these products, currently the reference product is requested either to be a market leading product or a generic product. Market leading products are not the same in all the countries and not all the products are sold across Europe. This raises problems of unfair competition because when a product is awarded the EU Ecolabel by one CB it can be sold across Europe. So nowadays, it is easier to formulate EU Ecolabel products in some countries, what also means that products are less expensive and have a more favourable classification because they can be formulated with fewer ingredients. APC is exceptionally diverse so it is hard to envisage a universal test and a only reference product for all products and locations. This is reflected in the difficulty of defining a standard dosage. Due to this high diversity it is also
ALL		Indeed, the reliance on "*another consumer product" introduces uncertainty in the level of basic washing performance to achieve for an Ecolabel detergent*: the laundry category is vast, with a large multiplicity of quality tie ring, sub categories, dosages, technical claims and with geographic specificities. The reference to a "consumer product" may lead to further complexity and confusion for stakeholders and consumers. We recommend that the AISE minimum test protocol continues to be defined as the reference, with the same pass/fail criteria, as described in the current Ecolabel criteria for laundry	
ALL		The cleaning ability must be equivalent to or better than that of a market-leading or generic reference product, approved by a competent body.	

APC		The *market-leading or generic reference* product must be approved by all competent body and must be the same in each country.	difficult to assess the market leadership of a product. Therefore, it is suggested in this revision that if there is no a generic reference product, the reference product should be a product that is on the selves. Both products (testing product and reference product) shall belong to the same category (professional, non-professional, RTU, concentrated, etc) and be designed for the same area of use (WC, kitchen, sanitary, APC, glass, etc). Regarding the generic formulations to be used, all cleaners can be tested against generic formulations that should be representative of products that belong to the same group on the market, with the exception of toilet cleaners and HDD whose compositions are given in the respective IKW protocols.
HDD		The reference product or the test method is not very good because products tested score much better	
APC		For the reference of bathroom cleaners RTU do not add the Rheozan. Rheozan has not to be added for the reference product of RTU bathroom cleaners because this kind of products is used with a sprayer which makes foam. RTU bathroom cleaners are not viscous. If the reference product is viscous, it is too difficult for the Ecolabel product to be as efficient or more than the reference product on the limescale removal testing on vertical surfaces	**Comment Accepted** The indication of using the same generic formulation for acidic toilet cleaners and bathroom cleaners has been removed based on the evidence provided (examples of both generic formulations will be included in the user manual). Reference product for bathroom cleaners is proposed to be either another bathroom cleaner on the market or a generic formulation that is representative of the products on the market.
LD		Ecolabel has to produce new standard formulas, updated to the real market of today. Standard formulas such as IEC-A* powder are out of date by now.	**Comment Rejected** Accepted generic formulation as representative of a product type has plenty of advantages that exceed the backwards of testing a product against a non-updated formulation.
LD		In the slides of the 1st AHWG meeting it was written: "the reference product shall be tested against another consumer product". We suppose it was a mistake. If not, we would have the following comments: for a laundry detergent, the current Ecolabel criteria (June 2014) states that the laundry powder or liquid detergent needs to demonstrate a minimum efficacy against a reference detergent Powder (IEC A 60456 Basic powder with or w/o Percarbonate and TAED with or w/o a dye transfer agent), with a well define dosage per wash. The reference to a unique, well defined, international and recognize IEC standard should be kept in with the objective of setting a robust Ecolabel standard and test protocol.	**Comment Accepted** The standard IEC 60456 was modified in 2011 and is valid until 2017. The version keeps the standard Type A* detergent. Referring to this detergent in the EU Ecolabel protocol we ensure the availability and homogeneity of the reference detergent across Europe, which are main advantages and reasons to keep it as reference product.

LD		For light duty detergents, the current reference detergent is not from an internal standard. Also the detailed composition looks far from a standard European light duty detergent. The new Ecolabel criteria should define an amended reference detergent composition and dosage instruction.	**Comment Partially accepted** For the time being, the IEC 60456 does not have a light duty detergent defined as standard detergent although work is on-going to develop a proper composition for this kind of detergent. The possibility of referring to a standard light duty detergent will be considered in the future revisions.
Industrial and institutional		Comment from the 1st AHWG meeting: Currently there is no common reference product against which their own products should be tested (for all products in all countries) and they have stated that in some countries the reference products are less effective, and thus their performance is easier to match or beat, than in other countries but that they can be sold in all markets. Moreover, differences in interpretation of the EU ecolabel texts by different CBs were also highlighted as possibly leading to products from certain countries undergoing less stringent scrutiny than others General consensus that the notion of market leader for I&I product does not exit. As the market is restrained, a stakeholder stated that a single common reference product could be found, at least for some products as discussed.	**Comment Accepted** Due to the specific requirements of the industrial and institutional cleaners and detergents, most of these products are particularly formulated for their purpose. They are detergent "a la carte" and for this reason it is - difficult to identify the market leaders and, - difficult to decide which generic formulation is representative of the products on the market. Both conditions are needed to perform a laboratory test. Additionally and because of this specific formulation it is likely that the water hardness is already considered in the recommended dosage and that the washing temperature is known before formulating the detergent. Due to the lack of reference product, a proposal for deleting the laboratory testing for industrial and institutional detergents is proposed.
Industrial and institutional	Laboratory or user test?	Firstly, we would like to comment that we don't agree with a common approach for both consumer and professional products in terms of Fitness Check. The main reason being the fact that the market is completely different. Suppliers of consumer detergents generally don't know their customers but suppliers of professional detergents know their clients very well. We think that professional, institutional or industrial products should be tested by an adequate and justifiable consumer test, all products, because it is simulated true conditions better than a laboratory test. We don't agree with point (a), the internal or laboratory test, and we would like to keep the current criteria in relation to user tests for professional products.	**Comment Partially accepted** The possibility of testing the industrial and institutional products by means of both laboratory or user tests is currently included in this type of products. However, and according to the information received the professional detergent sector is very specific (see rationale above). The products are tailored and formulated regarding the specific needs of the customers. Therefore, it is difficult to find standard detergent products or market-leader products to carry out the lab tests and user tests play a relevant role. On the other hand, stakeholders indicated that confidential issues may arise if information on the way the testers were selected is disclosed and test

		In the current criteria, for the professional products the testing at user level is allowed. The current documentation does not make it clear if that will still be the case for professional laundry detergents. A.I.S.E. would like to understand if this is the case and the reasoning behind.	results are communicated. According to this feedback, companies are not willing to justify why a certain tester has been chosen to perform the user test. There may be several reasons, all related to confidential strategy and business information (e.g. wish to replace a product, wish to have new customers, wish to answer a specific demand from an existing customer, etc). Criteria for industrial and institutional products have been revised to ensure compliance by means of user tests.
	water hardness	BEUC and EEB believe that it is very relevant to take water hardness into consideration when setting the criteria on reference dosage for Industrial and Institutional detergents. Indeed, it would allow setting more appropriate dosage requirements as those vary according to the level of water hardness. We welcome this initiative as it would optimize the use of the product in all cleaning situations.	**Comment Rejected** Considering the information included in this table and the large differences between the professional detergent products, it seems that the water hardness would be considered by the manufacturers when recommending a proper dosage for their products
	Temperature	In this sector the temperature is dictated by the process/machine, therefore the formulators do not recommend any temperature as they cannot change the equipment.	**Comment Accepted** Recommendations for the temperature in industrial and institutional detergents are not relevant as they are fixed by the equipment.
all		No. Results will flatten if this low temperature is used, making any discrimination harder to do, lowering results value. Where the actual test is already demanding too little, in our opinion. A revision for this test is already planned so we are looking for further development.	**Comment Partially accepted** Pros and cons of testing the products at lower temperature are summarized in this section: - *advantages:* ensure good performance at low temperature is the basis to recommend washing at lower temperature - *disadvantages*: testing at low temperature makes difficult to discriminate good performances from not so good, creation of unfair situations between reference and testing products, Due to the pros and cons listed above a compromise solution seems to be the allowance of testing at lower temperatures but without being applied to the reference product. In this sense, the washing performance of the reference product is not flattened and it remains as a fixed benchmark to compare with. The lower washing temperature and the successful performance of the testing product at those temperatures ensure that ecolabel products can be used in cold washings, reducing their overall environmental impacts.
LD		We do not agree with the proposal to use 30° C during performance laundry testing. We know from experience that results will be flattened, making any discrimination harder to do, lowering results value. Where the actual test is already demanding too little, in our opinion. A revision for this test is already planned so we are looking for further development.	
LD		The wash performance had to be tested at 30°C, this is not a change since June 2014.	
LD		In the current version from June 2014, it is indicated that: Page 7 2.3. Water Inlet Temperature: 20.0 ± 2.0 ºC. Products which claim to be efficient at a wash temperature lower than 20 °C shall be tested at 15°C. In this case, the water inlet temperature will be different to the wash temperature for tested product (15.0 ± 2.0 ºC) and	

		reference detergent (20.0 ± 2.0 ºC). The water inlet temperature shall be reported for the test product and reference detergent. Page 16 2.14. Wash Program: The next table shows the different wash programs for the Ecolabel performance test. With low temperature and cold-water wash products, the washing performance will be determined at the lowest stated temperature at which the detergent is claimed to be effective. The reference detergent must be tested at 30ºC. We think that both the test product and reference detergent should be tested at the same temperature.	
LD		We acknowledge that environmental benefits of the washing process arise most of all from using less energy which means to wash at lower temperatures. Therefore it is useful to ask that all laundry detergents awarded with the EU Ecolabel shall be applicable at 30°C and maybe we accept less desirable chemicals if they are needed for this purpose. But with these less washing temperatures also some problems might arise, for example odour formation, see Austrian Comments on the Revision of the EU Ecolabel criteria of the Detergents Group 2/3 http://www.swissatest.ch/files/downloads/90d632725e685a48967925bd44cda783/Odour%20formation%20on%20textiles%20-%20Fresenius.pdf. This is why it is often recommended to wash once a month at higher temperatures, for example in this German instruction manual of a washing machine http://www.miele.at/pmedia/ZGA/TX2349/9788060-000-01_9788060-01.pdf. In case of infections or immune depleting persons in a household higher washing temperatures might be needed, see p.116 here (in German) https://mediatum.ub.tum.de/doc/603197/603197.pdf.	

LD		Bearing in mind that the solution isn't only to wash at lower temperatures but also to consider *additional measures* we *don't think that the EU Ecolabel for laundry detergents shall or can be a mean to give all of this information to consumers*. We would ask the producers of laundry detergents and washing machines to do this.	**Comment Acknowledged** Regarding the *information to be given* on the Ecolabel products and the problems that can rise if low temperature washing are recommended, it is considered that information should be given to the consumers regarding: - the ability of ecolabel products to be used at lower temperatures with good washing performances - the environmental benefits of washing at lower temperatures - the sources of information about the most recommended temperature depending on several washing aspects. However, given the information on the package of the EU Ecolabel product does not prevent to be given or repeated in public campaigns or in leaflets on the washing machines.
APC	Soil removal and cleaning performance score	For instance for the all-purpose cleaners it is demanded the fat removing capacity. However, very often that is not necessary as there is no fat to be removed.	**Comment Rejected** Greasy soil is proved to be the most common household soil and in every surface of the house. This type of soils also catalyse the deposition of other soils, therefore performance test against fat is proposed to be kept
APC		Should evaluation of burnt on soil removal be added as an additional requirement of the testing procedure for kitchen cleaners? Yes. We think it is one of the essential requirements for a cleaner kitchen	**Comment Accepted** Better classification of the cleaning products is proposed in this revision that will allow setting up more appropriate fitness for use requirements
APC		a) Window cleaners: The framework for testing also requires it has to be tested against water. This is not mentioned in the criterion. That should be made clear.	**Comment Accepted** Requirement of cleaning better than water added. It was included already in the protocol anyway.
DD, HDD		Clearer wording should be used for the degree of soiling throughout the document. The reference dosage talks about normally soiled dishes. The user instructions talk about "dirty" and "less dirty" dishes. What are normal, dirty or less dirty dishes? In the guidelines for testing, again other wording is used. This should be harmonized.	**Comment Accepted** Harmonization will be enhanced for all the product groups among the criteria of the same product group and among the product groups. For dishwasher detergents it is proposed to use the terms: heavily soiled, normally soiled and lightly soiled dishes. HDDs protocol includes the classifications of low fat and normal what is proposed to be changed in the criterion wording
all		Quel est l'intérêt de demander un nouveau test « burnt-on soil » sachant que le protocole IKW actuel utilise déjà une salissure brûlée pour le test de dégraissage ?	

ALL		Does the criterion need to provide further information regarding the specification and supply of test soil? no	**Comment Acknowledged**
		b) <u>For sanitary cleaners:</u> The framework writes it should be 70% of the reference product. In the IKW test is written 0,7. This does not have the same precision. There should be a test for concentrated sanitary cleaners.	**Comment Accepted** Precision of the EU Ecolabel framework and IKW test should be as close as possible if the first on relies on the second one. Revision of the wording of the criteria is proposed to correct the mismatch
HDD	number of repetitions	Should the number of repetitions required by the testing procedures be increased to 20, in line with HDDs? Yes, for the measure of the cleaning performance: increase the number of repetitions improves data evaluation. Not for the IKW-test 'Recommendation for the quality assessment of acidic toilet cleaners (SÖFWJournal,126, 11, pp. 50-56, 2000).	**Comment Partially accepted** Although it is sure that the higher the number of repetitions, the better the evaluation of the results, there are studies that considered that 5 repetitions can lead to a good value*.The optimum number of repetitions will depend on the cost of testing and the quality of the results. Stakeholders indicated that increasing the number of repetitions of testing will increase the costs of testing which may also have disproportionate impacts in SMEs. Therefore a balance between statistical significance and cost is required. During the consultation two stakeholders provided more substantive feedback on the method employed by their own test-houses: - stakeholder A: 20 repetitions, but up to 40, could be employed with a corresponding indicative increase of test costs of around 30% over the 5 required with the criterion - stakeholder B: the existing cost for 5 repetitions is 750euro, the future cost if 20 repetitions are required will be between 3500 and 3750euros. As a comparison, laundry detergent criteria employ 15 repetitions and HDDs, at least 5 repetitions. It is therefore suggested that he APC (and HDD) test could be increased to 15 to tighten the variance within the product test in line with stakeholder's experience and to align with laundry detergents. For the APC testing, this might increase costs by perhaps 10-15% according to stakeholder A and by around 1500euros according to stakeholder B (not explained why there are dis-economies of scale).
APC		5 repetitions are sufficient (in general for all detergents)	
		Number of repetitions increased to at least 20 (this was also proposed for APCs)? Yes, for the measure of the cleaning performance: increase the number of repetitions improves data evaluation.	
		De plus quel est l'intérêt d'augmenter le nombre de répétitions à 20 alors que ce test est très reproductible ? Enfin, ces propositions d'évolutions rendraient le test beaucoup plus couteux ce qui serait encore une surcharge financière supplémentaire pour le fabricant	
		Number of repetitions increased to at least 20 (this was also proposed for APCs)? 5 repetitions are sufficient	
		For domestic or use private cleaning products the number of consumer must be smaller than 80 consumers, because it is impossible doing it.	
DD	Test protocol	I think that IKW shouldn't be the only one. Performance on Dishwasher. We think that also in house tests method accredited ISO 17025 are valid like official dedicated Standards Method (EN, ISO). In a perspective of cooperation and transparency I am attaching a document that highlights the some considerations between the IKW and our method.	**Comment Accepted** 'or equivalent' is proposed to be introduced in the criterion wording to allow the compliance of the fitness for use criterion by means of other test procedures. The equivalence is proposed to be assessed by the competent bodies that verified the application. Some guidance on how to assess the equivalence will be given in the user manual.
		<u>We recommend that the A.I.S.E. minimum test protocol continues to be</u>	

		defined as the reference, with the same pass/fail criteria, as described in the current Ecolabel criteria for laundry detergent	

* In the IKW protocol for hand dishwashing detergents available at www.ikw.org/fileadmin/content/downloads/Haushaltspflege/HP_EQ-Handgeschirr-e.pdf. There is an example of testing HDD with 5 repetitions. The results are shown for 8 products. The testing follows the ANOVA analysis and reaches a level of significance of 95% being at this level only 2 out of the 8 products with a significantly different cleaning performance.

8.17.2 Further research on the reference products for the fitness for use criteria

The standard IEC 60456 "Clothes washing for household use" includes several standard laundry detergents that could be proposed as a European reference product. Likely the IEC 60436 "Electric dishwashers for household use" has several standard dishwasher detergent formulations. Both sets of standard detergents formulations are summarized in Table 84.

Table 84. Most commonly used standard laundry detergent formulations included in the IEC 60456 and ICE 60436 [105]

Standard	***Detergent***	***Description***
IEC 60456	*Type A**	*IEC-A* Base code 88101-1, HD, phosphate-free, low suds* *It is the standard detergent formulation included in the current 5th edition of ICE 60546 and it is verified to be fit for use in all known washer platforms and with all the water hardness*
	Type B	*IEC -B BASE code 88020, HD, phosphate, medium suds* *this formulation is no longer specified in the latest version of the standard*
	Wool detergent	*IEC-W code 88038, liquid* *The new procedure is planned to include a formulation for a dedicated standard wool detergent, because the formulation of the IEC-A* detergent (which is currently used for the shrinkage test) differs significantly from market wool detergents.*
IEC 60536	*GSM-A*	*Reference detergent Type A with phosphate code 88101* *This detergent is no longer in the latest version of the standard. The main (or rather: only) field of application now remains in material testing according to EN 12875.*
	GSM-B	*reference detergent type B code 88101, phosphate free* *currently specified test detergent*
	GSM-C	*reference detergent Type C, code 88103, with phosphate* *currently specified detergent but very rarely used*
	GSM-D	*reference detergent type D, code 88104, phosphate free* *the detergent according to the latest draft formulation is available from WFK*

Table 84 shows the different detergents used in the international standard in place for testing the cleaning performance of both washing machines and dishwashers. Underlined detergents are dosed proposed to be used as reference detergents in the EU Ecolabel.

Currently the standard detergent Type A (ICE- A*) is a heavy duty phosphate-free detergent that is widely used in Europe as standard product to test the washing performance of household washing machines. Due to its wide acceptance across Europe it can be kept also as reference product to test the fitness for use of candidates to the EU Ecolabel Laundry Detergents.

According to IEC 60546 the type A* is the standard detergent for the performing test. This detergent is supplied in three separate ingredients: 77% wash powder (with enzymes and foam inhibitors), 20% sodium perborate tetrahydrate and 3% bleach activator (TAED). The dosage is also determined in the standard and varies depending on the hardness of the water. For example, for hard water the dose is 54g+(from 8 to 16) g/kg of laundry depending on the programme whereas for soft water 36g+(from 5.3 to 10.7) g/kg of laundry depending on the programme

In the case of low duty detergent the formulation is given in the Annex 3 of the EU Ecolabel protocol. Therefore the proposed reference detergent is not a leader on the market, but just a generic formulation. Regarding the comments that the formulation differs from the standard European formulation for light duty detergents it is impossible to assess as no typical formulation has been provided. Likely, there will be a possibility of referring to a standard detergent once the "wool detergent" will be introduced as standard detergent in the coming revisions of the standard IEC 60456. However, for the time being, this possibility does not seem to be feasible.

The standard detergent GSM-B is a phosphate free detergent that is currently proposed in the European standard to test the cleaning performance of household dishwashers. The Type B detergent mainly consists of 30% sodium citrate dehydrate, 12-2% maleic acid and 25% sodium disilicate, among other components.

The quantity to be used shall be that recommended by the manufacturer, but shall not be more than 2.5 or 3.0 g/place setting for dishwasher of full size or slim size respectively. If no recommendation is given the standard proposes to add 2.0 or 2.5 g/place setting for dishwashers of full or slim size respectively.

Checking the current laundry detergent [106] and dishwasher detergents protocols, it is observed that it is already proposed the Type A* standard detergent as the reference detergent of the test performance laundry detergent protocol (page 15). However, the recommended dosage to be used is not exactly the same as in the IEC 60456 but pretty close. The EU Ecolabel protocol proposes 70g basic powder of the type A* detergent to be complemented by 12.5g Sodium Percarbonate (CAS : 15630-89-4) and 2.5g TAED (CAS: 10543-57-4). That means a total of 85g/per cycle. That is very close the amount of detergent that the international standard proposes for the rated capacity of EU Ecolabel. It is proposed to keep the dosage of the EU Ecolabel protocol

Dishwasher detergents should be tested against a reference product in accordance with IKW protocol or the modified EN 50242/IEC 60436. This means that the detergent GSM-B included in Table 84 should be selected. In case of testing the product in accordance with the IKW protocol, the detergent GSM-D could also be used. Due to the reasons given above such as the availability of the product across Europe and the high stability of its composition these standard detergents are proposed to be kept as the reference products.

The definition of the reference products for industrial and institutional laundry and dishwasher detergents seems to be not so easy/clear. Currently industrial and institutional detergents can be tested by means of user tests or laboratory tests.
The revision of the Preparatory Studies for Ecodesign of Professional Washing machines [107] indicates that, at the time of the revision, there were not European Standards nor international standards and therefore, there are no standard detergents to test the performance of professional machines. However, this study includes a comparison of the conditions for testing in two different schemes: the protocol of the Danish Technological Institute and the ISO 9398-4. In the first scheme performance tests should be carried out by using the detergent Type A while in the second scheme there is a reference to detergent type A or B depending on the duration of the cycle as follows:

Test cycle A: 76 min (detergent A)
Test cycle B: 43 min (detergent B)
Test cycle C: 22 min (detergent B)

The preparatory studies for the revision of professional dishwasher also came up with the no existence of performance testing standards at European level and consequently, for the time being there is no a standard detergent for professional dishwasher detergents. The preparatory study lists an extensive list of ASTM standards that are suitable for this type of machines.

The lack of European standards for testing the commercial and professional machines was recognized by CEN/CENELEC and in 2011 TC59X held the kick-off meeting of two projects to develop performance standards for laundry machines for commercial use (CLC/TC59X/SWG1.12) and for dishwasher machines for commercial use (CLC/TC59X/SWG2.1). The standard project is divided into two parallel parts: the first one is related to the measurement procedure of the energy consumption (appliance, environmental condition etc.), the second one is related to the performance test (hygienic test or similar which has to be developed).

This study also pointed out that it is impractical to apply standards EN 50242/IEC 60436 standard to professional dishwashers as the defined soiling of the items is mainly related to the soiling in household use (the soiled wash ware undergoes an oven drying procedure for two hours to simulate stubborn soiling). In professional use, the dry-on time is usually very short (less than two hours at room temperature). Thus, the soil remains relatively soft and can be washed-off rapidly. The programs of professional dishwashers are adjusted to this kind of soiling. Measurement with EN 50242 / IEC 60436 standard would not reflect real performances. As an appropriate standard for measuring the performance of professional dishwashers does not exist at EU level, manufacturers use internal test procedures which allow direct comparison between models of similar performance characteristics.
Several standards for professional dishwashers have been developed across CECED Italia has proposed a draft standard for measuring the washing performance and rinsing performance (derived from EN 50242).

The German HKI (Industrieverband Haus-, Heiz- und Küchentechnik e.V.) started to prepare a proposal for a separate performance standard on utensil/pot dishwashers as they did not agree with the proposed Italian version and also TÜV Süd developed tests utensil/pot dishwashers based on an own measurement method adapted to the conditions for those appliances.

The Danish Technological Institute (DTI) has tested the cleaning performance of ten hood-type dishwashers using the following measurement method: „VGG Prüfverfahren zur Reinigungs-Index-Bestimmung von gewerblichen Geschirrspülmaschinen, Blatt 1 Kleinmaschinen; Entwurf 1970, ergänzt 1973“, with some modifications. These modifications follow as far as possible the European standard EN 50242 for household dishwashers. The manufacturers of dishwashers can at any time ask the laboratory to test (for their own cost) their new machines or programmes and after reviewing the test results they can ask the DTI to place the data sheet on the web site of the Danish Energy Association. They may also have older datasheets exchanged with new ones However, the VGG methodology has not the potential to become an standard performance tests since it had not been updated in a long time and there are concerns about the low repeatability of the method.

ENAK (Energetischer Anforderungskatalog an Geräte für die Verpflegung und Beherbergung) developed specific test definitions for the measurement of different professional dishwasher categories (undercounter, hood-type, pot/utensil, conveyor-type (basket / belt) dishwashers). To some extent, they are based on IEC 60436 "Methods for measuring the performance of electric dishwashers". At ENAK’s homepage there is no public access to further information with regard to the detailed measurement method or data on tested appliances.

Due to the unsuccessful trials of setting a reference product for industrial and institutional detergents and that they are very specific and generally formulated depending on the need of the consumers, no reference product is proposed in this revision (TR2.0). This fact is also pointed out by the fact that laboratory tests can hardly be carried out. Additionally, the specific formulation used by each consumer does not allow identifying market-leading products or generic formulations that are representative of the market.

User tests are therefore the way to test these products suggesting the possibility of deleting the compliance of this criterion throughout the laboratory tests. Keeping in mind the nature of the user tests and that the industrial and institutional detergents are developed 'a la carte' to be able to live up consumer's expectations, it does not make sense to set requirements on dosage and/or dosage variations depending on the water hardness or water temperature. These parameters are already considered prior to detergent development.

Due to the particularities of the industrial and institutional detergents, concerns about the disclosure of confidential issues can arise while the assessment and verification is conducted. For example, it was pointed out that how and why the testing centres are selected or how to report the test results can be part of the problem. A revision of the assessment and verification body considering these points was conducted.

Reference formulations can be an alternative to the market leader products. In this case, a generic formulation can be included in the framework for testing the performance of the products and being used across Europe. This is the main advantage of this approach together with the low intervention of the Competent Bodies (market leader product should be previously accepted by the CBs or CBs should decide which are the market leaders products in the region). However, several disadvantages such as the difficulties to choose a representative generic formulation or to assess the level of strictness make this alternative not the best solution. Due to the lack of standard detergents, industrial and institutional products are proposed to be tested by means of user tests.

The IKW protocols indicate two reference formulations for acidic toilet cleaners and hand dishwashing detergents. Due to the advantages of having generic reference products across Europe, these formulations are proposed to be kept on the criteria. For other products, mainly labelled as hard surface cleaners, the applicants should propose the generic formulation they want to test and to submit for acceptance to the competent bodies before conducting the testing. Hard surface cleaning products lack on reference products for two main reasons: the products on the shelves are not the same ones across Europe (neither those with the biggest market shares) and there is a large number of products falling into this product group that does not allow to set a typical or reference generic formulation. These facts makes difficult that all the member state agree with one reference product for testing or even with several reference products depending on their intended use (eg professional or non-professional, flooring, toilet cleaner, kitchen cleaner, etc….)

Additionally, the requirement of testing the toilet cleaners and the bathroom cleaners against the same reference formulation has been deleted as evidences have been provided that the typical formulations are markedly different.

8.17.3 Further research on the type of soils and surfaces to be cleaned

Several concerns have been expressed about the mismatches between the performance tests required for the cleaning products and the purpose of the cleaning product. In this sense, it has been highlighted that the removal of fat is required for all-purpose cleaners regardless the main purpose of the cleaning agent. Michael Showell [108] has developed a classification of the household soils as follows:

- *greasy soils* are probably the most common ones and can be found on all surfaces in every part of the household. Typical examples are cooking oils, sauces, fingerprints, cosmetic products or shoe polishes. Cooking oils in particular are ubiquitous because the vapours produced during frying process spread around the house and deposit in all the surfaces. Once even a thick layer of oil has deposited on a surface, it catalyses the deposition of more soil. Thus greasy soils are very relevant to consumers both because they are so common and because they have a significant impact on surface appearance.

- *encrusted greasy soils* is the most typical example of stubborn soil found in the kitchen, particularly near the cooking area or inside ovens. Its specific composition can vary significantly, however in most of the cases it derives from a complex series of reactions oils undergo when exposed to high temperature or upon ageing.

- *bleachable soils* include all those surface contaminants that carry oxidizable, usually coloured groups. Examples are beverages such as teas, coffee, wine or body fluids/excrements. Beverages are common soils on carpets and upholstery. Other important and difficult to remove bleachable soils are molds and mildews, which can be black spots on the walls, wallpaper, shower curtains, and grout. Obviously the distinction between bleachable and greasy soils is not clear cut and there can be many soils having at the same time bleachable and greasy character. For instead, encrusted greasy soil usually has a strong sensitivity to bleaching agents because its polymeric chains can be partially oxidized, which results in increased solubility and removability.

- *particulate soils* are common in horizontal surfaces such as flooring and furniture. Their particular size and composition can vary significantly depending on the location of the house and the season. Various attempts to determine the average composition of particulate soil for technical testing purposes have been made and summarized in Table 85

Table 85. Composition of particulate soils

Composition	Weight (%)	Composition	Weight (%)
Sand, clay, quartz and/or feldspar	45	Gypsum, apatite	5
Animal fibres	12	Limestone, dolomite	5
Cellulosic materials	12	moisture	3
Resin, gums and starches	10	undetermined	2
Fat, oils, rubber, tar	6		

- *soapy soils* can be found particularly in the bathroom, for instead on the sinks, bathtubs or in other shower areas. The so-called "soap scum" is essentially soap that has been precipitated by Ca or Mg ions and is usually mixed with insoluble carbonates, skin flakes, fabric fibers and dust. Upon ageing, soap scum can undergo some of the processes described for encrusted greasy soils, which obviously increases its hardness and adhesion to the surface making it much more difficult to remove.

The most important pH sensitive soil is limestone. This can be easily found in bathrooms and kitchens, particularly around the taps, inside sinks, bathtubs and showers. Limescale is a mix of Ca and Mg carbonates and oxides, which originates from repetitive water evaporation on the same surface. Once the layer of limestone is formed, this can attract not only more limescale but also soils from different nature, for instance rust or organic materials. Water marks are pH sensitive soil very similar to limescale encrustations, since

they are essentially salts deposits left on a surface by evaporation of water droplets. However, there are even more relevant to consumers because they are more frequent and visible.

Another important issue to consider, apart from the nature of the soils, is the type of surface to be cleaned. Michael Showell [108] also classified the type of household's surfaces as follows:

- *glassy surfaces* are a vast majority including glass itself, ceramic, porcelain and enamel. Although different from a structural standpoint, it can also be included in this category stones, hard floors in general and marble. Glassy surfaces are characterized by high surface energy, which essentially derives from a high concentration of oxides they contain. This means that their tendency to be wetted by soil and to form bonds with it is relatively high, due to the possibility of strong polar interactions. In particular, soils that are able to form hydrogen bonds or have cationic or polar groups, such as limescale, can adhere very tenaciously to these surfaces. Glassy surfaces have an excellent resistance to chemical including surfactants, solvents and bleaching agents. They also have a good compatibility with acids, with the exception of enamel and marble

- *wood surfaces* are probably the most delicate surfaces in a household. Its properties depend to a large extent on the surface treatment. Lacquering offers more resistance and makes the cleaning easier. Wood can be treated with mild surfactants/solvents and it is not compatible with bleaching agents, strong acids and strong alkalis.

- *plastic surfaces* include a variety of materials, which tend to be characterized by a low surface energy and high hydrophobicity. Thus adhesion between plastic surface and soil is usually lower than in the case of glassy materials. Plastic surfaces have a tendency to accumulate electrostatic charges and to attract dust. From a compatibility standpoint most critical cleaning agents for plastics are solvents, which may damage some plastic surfaces due to partial solubilisation of the material.

- *metals* may have a high energy surface like glassy surfaces. The ability of encrusted greasy to adhere to a stainless steel surface is well known to most consumers and is often used as advertising effectiveness property of the cleaner. Metal surfaces have excellent compatibility with surfactants and solvents but in some cases might be changed by acids and bleaches. Stainless steel has good resistance to acid and bleaching agents provided that pH conditions and active concentrations are not too strict

- *carpet flooring* that is the vast fiber surfaces in the household. However, these types of cleaners are supposed not to be covered by this scheme.

Although the classifications presented are based on household soils and surfaces, most of them are the same in the industrial and institutional sectors, especially in environments such as offices, commercial buildings, educational buildings and so on.

From this information, it seems suitable to require a good cleaning performance as shown in Table 86. This table considers that greasy soil is the only type of soils that should be required in all the products but not the only one. Modifications on the type of soiling removal efficiency of the hard surface cleaners to be reported are proposed to be based on Table 86.

Table 86. Types of soils to be tested regarding the hard surface cleaner

Cleaning Product	Soil types Literature	Soil testing* EU Ecolabel	Cleaning Product	Soil types Literature	Soil testing* EU Ecolabe
Windows	Greasy soil (fingerprints) Particulate matter	Fat removing effect Particulate matter	**Kitchen cleaners**	Greasy soil Encrusted soil Bleachable soil Particulate soil Soapy soil	Fat removing effect Particulate matter
Floor and walls cleaners	Bleachable soil Particulate matter Greasy soil	Fat removing effect Particulate matter	**Bathroom cleaners**	Greasy soil Bleachable soil Particulate soil Soapy soil	Fat removing effect Limescale Limesoap (soapy soil) Particulate matter
Upholstery cleaners	Bleachable soil Particulate matter Greasy soil	Fat removing effect Particulate matter	**Toilet cleaners**	Greasy soil Bleachable soil Particulate soil Soapy soil	Fat removing effect Limescale (acidic toilet cleaners) Particulate matter

* soil testing in black indicates that it is required in the existing criteria and in red that it is proposed in this revision

8.17.4 Further research on testing temperatures

The purpose of a test is to gauge effectiveness of a candidate product against a standard product under similar conditions. Temperature is important to the extent that similar background physical conditions will prevail. For example, a key parameter is water viscosity, which is temperature dependent. At lower temperatures, viscosity rises, the greatest effect being increased residual textile wetness after spinning, resulting in residue retention and effect on e.g. brightness. There may also be some effect of detergency action, though this will be highly offset by the mechanical washing action. In this respect temperature is less important because it is already factored into the standard formulation/test combination. In addition, the formulation of the candidate product will also take the viscosity effect into account for all aspects of the wash phase. Accordingly an exact correspondence between test and standard conditions may not be necessary, though it may be desirable for test consistency and simplicity reasons.

Specific research on testing temperatures for laundry detergents

Regarding the washing temperature two aspects have been considered in this revision. On the one hand, it is desirable that the EU Ecolabel products are able to wash at the lowest possible temperature. This aspect considerably decreases the overall environmental impacts caused by the laundry since no or minimal heating of the washing water is needed. However, it has been pointed out if both the testing product and the reference product are tested at such low temperature, the results can be flattered. In order to avoid this possibility and ensure that the EU Ecolabel has good washing performance at lower temperatures, it is proposed to test the testing product at the lowest claimed temperature while the reference formulation shall be tested at 30C that is the temperature indicated in the protocol. Possible mismatch regarding the inlet temperature to the washing machine has also been revised.

Specific research on testing temperatures for industrial and institutional laundry detergents and for industrial and institutional dishwasher detergents

As commented before the industrial and institutional detergents are performing under specific conditions set by the consumer. This fact makes unfeasible to set a testing temperature, other than that usually used in the consumer facilities. This requirement is reflected in the wording of the criteria as identical washing conditions are required for both the testing and the reference products.

8.17.5 Further research on other issues

Updating process of the IEC 60436

The international standard for testing household dishwasher machines IEC 60436 is currently being updated. Afterwards, the adaptation and updating of the European standard will take place. Due to the continuous revisions of the standards and protocols the fitness for use criterion is proposed to be based on, the most updated versions of these schemes.

Several minimal modifications have been introduced in the wording to bring clarity and enhance the harmonization of the criterion wording with the international standard. For example, reference to the values provided by the standard have been added for the water hardness, detergent dosage or cleaning performance of the machine, among others.

Relying on the international standard for testing the dishwasher detergents has several advantages such as harmonization of the testing conditions and reporting across Europe. For these reasons, most of the parameters that can rely on the EN 50242 / IEC 60436 standards are proposed to do so.

Equivalent tests are however allowed as long as the competent bodies assess and accept their equivalence. The IKW protocol is mentioned in the criterion wording, but there can be other suitable test methods that can be accepted.

Changes in the protocol for testing HDDs

Fitness for use is proposed to rely on the protocol developed for testing EU Ecolabel hand dishwashing detergents. This protocol has been however updated to include:

- an increase in the number of repetitions that will ensure a higher accuracy of the results. This fact will have an impact on the testing cost of the product. Information from the stakeholder suggested even if the number of repetitions is increased, the testing costs remain affordable for all the companies.
- a water hardness level in mmol $CaCO_3$/l to be in line with the European units.
- clearer description of the level of soiling. The words used in the IKW protocol will be used in the user information criterion to bring harmonization among the criteria and to make sure that competent bodies and end users have the same references.

Changes in the protocol for testing hard surface cleaners

Considering the reasons for the no-existance of a possible reference products for most of the hard surface cleaners, several modifications have been introduced in the wording on this criterion as well as in the wording of the protocol. For example: any product on the shelves can serve as reference product as long as its intended use is exactly the same as that of the testing product or that the generic formulation that serves as reference product for the toilet cleaners should not be used for the bathroom cleaners.

The existing protocol indicates that laboratory tests should be repeated five times. This number of repetitions seems to be too scarce to reach a statistical significance of the test results, being proposed to increase the number of repetitions to 15. The increased number of repetitions will come along and increased testing cost. However, stakeholders reported that even in this case, testing costs will be affordable for all the companies. Accuracy of the data has also been revised to polish the mismatches between the criteria wording and the IKW protocol wording.

Finally the soil removal and the soil testing have been revised. Fat removing is the only one that is applied to all kind of products in this wide product group. The reason behind is that fat is spread in all the surfaces and that it acts as a catalysts to trap dirt. Some other issues have been introduced such as the inclusion of burnt on soil removal in kitchen cleaners, the requirement that window cleaners should perform better than water, etc

8.18 Information

Common text template – USER INFORMATION
The detergent shall be accompanied by instructions for proper use so as to maximise product performance and minimise waste and use of resources. These instructions shall be legible or include graphical representation or icons and include information on (if appropriate): *(a) dosing instructions* The applicant shall take suitable steps to help consumers respect the recommended dosage, making available the dosing instructions and if possible a convenient dosage system (e.g. caps). Dosing instruction shall include information on the recommended dosage in g or ml and a second or alternative metric may be given in brackets (e.g. capsules, squirts, or other if the packaging has a dosage system). Recommended dosage for a standard load for at least two levels of soiling shall be included. Information on the impact of water hardness on dosing and indications of the most prevalent water hardness in the area where the product is intended to be marketed or where this information can be found shall be provided. *(b) resource saving measures* *[An indication on the primary packaging shall encourage users to use the lowest appropriate temperature the product claims effectiveness and to wash full loads, where appropriate.]* *(c) packaging disposal information* The primary packaging shall include information on the reuse, recycling and/or correct disposal of packaging. *(d) environmental information* The following text should appear on the primary packaging: *"All detergents have an effect on the environment. For maximum effectiveness always use the correct dose and, the lowest recommended temperature. This will minimize both energy and water consumption and reduce water pollution".* *Assessment and verification:* The applicant shall provide a declaration of compliance together wirh a sample of the product packaging, including the label.

Common text template – INFORMATION APPEARING ON THE EU ECOLABEL
The logo should be visible and legible. The EU Ecolabel registration/licence number must appear on the product and it must be legible and clearly visible. Optional label with text box shall contain the following text: — Harm to aquatic life is limited — Amount of hazardous substances is restricted — Tested for wash performance Assessment and verification: The applicant shall provide a sample of the product label or an artwork of the packaging where the EU Ecolabel is placed, together with a signed declaration of compliance.

8.18.1 Comments from stakeholders from the 1st AHWG meeting

Table 87. Stakeholders feedback on the criteria: information

		Stakeholder feedback	IPTS analysis and further research
LD/DD	Health and safety advices	We want to keep the *safety phrases keep away from children, don't mix different cleaners and don't inhale spray*. These sentences are not always mandatory (not if the product is not classified) and they are important information for consumers to prevent accidents and to educate consumers.	**Comment partially accepted** The statements regarding the health and safety measures are not under the scope of the EU Ecolabel. However, their importance makes it worth reconsidering whether the statements and the recommendations of use should be included on the packaging, especially for products intended to be used in the domestic sphere. The statements of safety are proposed to be kept but not the recommendations on the temperatures
LD		*If you are allergic to house dust, always wash bedding at 60°C. Increase wash temperature to 60°C in case of infectious disease*. We are in favour of keeping these sentences. Education of the user is very important. The *washing recommendations (lowest temperature, full load, dose according to soil and water hardness*) are very important and should be maintained.	
APC	temperature	*Resource saving measures: what is meant with "if applicable"?* Should it be *"cold water*" because the criteria for cleaning services refer to "room temperature", which is not the same.	**Comment Accepted** All references to 'room temperature' have been changed to 'cold water' i.e. cold tap water. Removed 'if applicable'. New text reads: 'unless it is the recommendation of the manufacturer to use water at a specified warmer temperature to dilute undiluted products for use.')
APC		Are all *non RTU products targeted*? This should be clarified.	**Comment Accepted** Dosage requirements have been split into RTU products and undiluted products. All undilutable products shall comply with this requirement
APC		Why is this voluntary? Not many companies will add it when it becomes voluntary	**Comment Rejected** We understood that this comment refers to the information appearing on the EU Ecolabel. It should be acknowledged that space on user labels is limited and may be reducing as formulations become more concentrated. In addition, there is no guarantee that more information on labels will overwhelm consumers with messages. It is therefore EU Ecolabel policy to identify key messages that might be delivered to users and consumers - should space allow - but to leave it to the manufacturer or retailer to decide which if any of these to promote.

HDD	Dosage	The dosage of the product has a high impact but is not easy to regulate. *Only mentioning the dosage in "ml" is not very informative for consumers. T*here is no clear guidance in the criteria how many ml the volume of a tea spoon is (sometimes translated into coffee spoons), which makes it difficult to verify. *Prevention of overdose should be the goal so we should look for a good way to achieve this.* For example a phrase which indicates that foam on the washing water is not needed to get clean dishes could be an option or the sentence "*use as little as possible".*	**Comment Accepted** Measures of dosage information have been added to the text of criterion as an example: 5 ml is equivalent to a teaspoon (Europe). Use only gradations of a quarter of a teaspoon. This to appear also in the user manual. Add to Criterion: *"Use as little detergent as necessary."* on packaging.
ALL		We would like to suggest the following additions to the proposed common template: "*The applicant shall take suitable steps to help consumers respect the recommended dosage, making available a dosage device, where relevant, and/or indicating the recommended dosage, where relevant, in a well-known metric."*	**Comment Partially accepted** The text proposed or equivalent has been included whenever relevant e.g. consumer products.

8.18.2 Further research on "user information"

Information appearing on the packaging provides useful information on how the consumer should use the product most effectively to achieve the best cleaning results whilst minimising the environmental impacts (eg minimise waste and energy consumption during and after the wash). These instructions shall be legible or include graphical representation or icons and include information on the most relevant points for each product. Some of the aspects to be considered for the user information criterion are: dosage and avoidance of overdosing, resource saving measures (eg wash at the lowest appropriate temperature, wash full loads, use refilling package and dispose the packaging properly, etc)

Finally a section on environmental information was proposed to be added. The text to be added or similar is: "All detergents have an effect on the environment. For maximum effectiveness always use the correct dose and, the lowest recommended temperature. This will minimize both energy and water consumption and reduce water pollution".

Previously, this text was proposed to be included in a voluntary basis, however, it was commented that a voluntary basis is not suitable in a pass or fail scheme. On the one hand, the benefits of including such as sentences are clear to bring awareness among the users of the environmental damages caused by washing under all conditions. On the other hand, it was commented that labels are getting without room due to the compliance with other Regulations such as CLP regulation. Even so, in this revision it is proposed to include the sentence.

Specific issues on the user information criteria for laundry detergents

The user information criterion is key to tackle the main environmental impacts of this product group such as energy consumption, water consumption and use of chemicals (consumption and disposal into waste water)

The first environmental impact is tackled by recommending washing at the lowest temperature the products claims to be effective. This temperature shall not be higher than 30C allowing performing the washing with minimal heating.

The second environmental impact tackled is the use of other resources such as the use of chemicals and water consumption. The latter is addressed by recommending full load washes and the further by providing the information on the proper dosage depending on the conditions (water hardness, soiling, etc.).

Resources are also preserved by encouraging a proper disposal of the packaging after use of the product.

Specific issues on the user information criteria for industrial and institutional detergents

The importance of this criterion is of high relevance to tackle the most important environmental impacts caused during the use phase and the end-of-life stages which control are out of the hand of the manufacturer. These pieces of advice are also not applicable to consumer products as the industrial and institutional ones could need to follow different procedures.

It is proposed that the text should include information regarding:

- the dosage depending on the level of soiling and water hardness,
- the water hardness of the place to be used
- the lowest temperature at which the detergent is effective
- instructions to reduce the environmental impacts during the end-of-life of the packaging and
- environmental impacts preventing from the perception that an EU Ecolabel detergent causes no environmental impact.

Specific issues on the user information criteria for dishwasher detergents

It is proposed that a recommendation on the use of salt to soften the water and improve the cleaning process should be included on the packaging information. It also ensures that the machine is protected from limescale and brings the EU Ecolabel in line with other ecolabels when considering the product dosage recommendations.

Specific issues on the user information criteria for hard surface cleaning products

Information appearing on the packaging provides useful information on how the user should use the product most effectively to achieve the best cleaning results whilst minimising the environmental impacts.

The dosage instructions are an important requirement as they aim to prevent overdosing and the associated environmental burden of the product through the unnecessary emission of chemicals of the product. As such it is important that the requirements on product dosing are clear and easy to use.

For undiluted products that require dilution prior to use, it is essential that it clearly states on the label/product information sheet how the product is to be diluted. This is already emphasised in the current dosing instructions through the phrase "*Proper dosage saves costs and minimises environmental impacts".*

The phrase '*this product is not intended for large scale cleaning'* was confusing and lost its original meaning when translated into other languages. Consequently an alternative wording has been proposed: "*The product is intended only for small or limited cleaning tasks. For extensive cleaning operations use an undiluted formulation."* The aim of this label is to signify to users that an undiluted product instead of a ready-to-use one should be employed if the cleaning task is extensive.

8.18.3 Further research on "Information appearing on the EU Ecolabel"

Information on the label is useful for reinforcing messages that endorse the consumer's choice of this product over non-EU Ecolabel alternatives. A number of aspects could be described drawing on elements of the criteria and currently the different EU Ecolabels propose different aspects to be promoted (Table 88).

Table 88. Aspects mentioned in the "Information on EU Ecolabel" criterion

Claim on label	HDD	APC	LD	IILD	DD	IIDD
Limits packaging waste/ Reduced packaging waste	Yes	Yes				
Reduced impact on aquatic life	Yes	Yes	Yes	Yes	Yes	Yes
Reduced use of hazardous substances/Limited hazardous substances	Yes	Yes	Yes	Yes	Yes	Yes
Clear user instructions	Yes	Yes				
Performance tested.			Yes	Yes	Yes	Yes

According to Article 8 (3b) of the EU Ecolabel Regulation 66/2010, for each product group, key environmental characteristics (typically three) of the EU Ecolabel product may be displayed in the optional label with text box. The guidelines for the use of the optional label with text box can be found in the 'Guidelines for the use of the EU Ecolabel logo' on the website:

http://ec.europa.eu/environment/ecolabel/documents/logo_guidelines.pdf.

The EU Ecolabel Regulation limits text to factual information regarding the product properties and does not permit statements regarding use. Further, the information may not mislead product users or imply that non-EU Ecolabel products do or may not have the same beneficial properties. As packaging is not considered as one of the most important aspects of an EU Ecolabel product in the detergents group, it is proposed to keep the following three claims for all product groups:

- reduced impact on aquatic ecosystems,
- limited hazardous substances,
- performance tested.

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