



Green Public Procurement

Cleaning Products and Services

Technical Background Report

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Abbreviations

aNBO	Aerobically non-biodegradable organics
anNBO	Anaerobically non-biodegradable organics
APEO	Alkyl phenol ethoxylate
AOX	Adsorbable organic halogen
BCF	Bioconcentration factor
CDV	Critical dilution volume
CLP	Classification, labelling and packaging (Regulation)
DTPA	diethylene triamine pentaacetic acid
ECHA	European Chemicals Agency
EDTA	Ethylenediaminetetraacetic acid
GHS	Globally harmonised system (for classification and labelling)
GLDA	Glutamic acid diacetic acid
GPP	Green public procurement
IFRA	International Fragrance Association
LCA	Life cycle assessment
MG	Methyldibromo glutaronitrile
MGDA	Methylglycinediacetic acid
SDS	Safety data sheet
NaOCl	Sodium hypochlorite
NO _x	Nitrogen oxides
NTA	Nitrolotriacetic acid
OECD	Organisation for Economic Co-operation and Development
pH	A measure of the acidity or basicity of an aqueous solution
PBT	Persistent, bioaccumulative and toxic
PFAS	Polyperfluorinated alkylated substances
P _{ow}	Octanol-water partition coefficient
REACH	Registration, evaluation, authorisation and restriction of chemicals (Regulation)
SDS	Safety data sheet
vPvB	Very persistent and very bioaccumulative
VOCs	Volatile organic compounds
WUR	Weight utility ratio

1 Introduction

The European Commission has presented recommended GPP criteria for a range of different products and services. Green Public Procurement is a voluntary instrument.

This Technical Background Report provides background information on the environmental impact of Cleaning Products and Services, based on life cycle data and outlines the key relevant European legislation affecting this product group. It presents market availability of this product group, some cost considerations and public procurement needs. It outlines the rationale for the core and comprehensive environmental purchasing criteria that are being proposed. It then goes on to describe existing standards and ecolabels, including the EU Ecolabel that covers the cleaning products product groups.



This report accompanies the associated **EU GPP criteria**, which contains the proposed purchasing criteria and ancillary information for green tender specifications, and as such they should be read alongside one another.

For each product/service group two sets of criteria are presented:

- **Core criteria** – these are designed to be used by any European contracting authority. They address the most significant environmental impacts, and are designed to be used with minimum additional verification effort or cost increases.
- **Comprehensive criteria** – these are intended for use by any European contracting authority who wish to purchase the best environmental products available on the market, and may require additional administrative effort or imply a slight cost increase as compared to the purchase of other products fulfilling the same function.

2 Definition, Scope and Background

This report covers all products covered by the EU Ecolabel outlined below.

2.1 All-purpose cleaners, sanitary cleaners and window cleaners

These cover the following three subgroups¹:

(a) All-purpose cleaners comprising detergent products intended for the routine cleaning of floors, walls, ceilings, windows and other fixed surfaces, and which are either diluted in water prior to use or used without dilution. All-purpose cleaners mean products intended for indoor use in buildings which include domestic, commercial and industrial facilities.

(b) Window cleaners comprising specific cleaners intended for the routine cleaning of windows, and which are used without dilution.

(c) Sanitary cleaners comprising detergent products intended for the routine removal, including by scouring, of dirt and/or deposits in sanitary facilities, such as laundry rooms, toilets, bathrooms, showers, and kitchens. This subgroup thus contains bathroom cleaners and kitchen cleaners.

The products covered are mixtures of chemical substances and must not contain microorganisms that have been deliberately added by the manufacturer.

(Note: From here on “all-purpose cleaners” will be taken to mean all three product types, unless specifically stated otherwise).

2.2 Detergents for dishwashers

The product group ‘detergents for dishwashers’ covers² detergents for dishwashers and

¹ Commission Decision (2011/383/EU) of 28 June 2011 on establishing the ecological criteria for the award of the EU Ecolabel to all-purpose cleaners and sanitary cleaners. Official Journal of the European Union, L169 29.6.2011. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:169:0052:0064:EN:PDF>.



products used as rinse aids, whether in powder, liquid or any other form, which are intended to be marketed and used exclusively in automatic domestic dishwashers and in automatic dishwashers for professional use, the size and usage of which is similar to that of domestic dishwashers.

A separate EU Ecolabel for dishwasher detergents for professional use is under development in 2011.

2.3 Hand dishwashing detergents

The product group ‘hand dishwashing detergents’ covers³ all detergents intended to be used to wash by hand dishes, crockery, cutlery, pots, pans, kitchen utensils and so on.

The products covered are mixtures of chemical substances and must not contain microorganisms that have been deliberately added by the manufacturer.

2.4 Laundry detergents

The product group ‘laundry detergents’ comprises⁴: laundry detergents and pre-stain treatment removers whether in powder, liquid or any other form which are marketed and used principally in household machines but not excluding the use in 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 beside pre-treatment.

The product group does 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.

A separate EU Ecolabel for laundry detergents for professional use is currently under development however an agreed product group definition is not yet available.

(Note: From here on “laundry detergents” will be taken to mean laundry detergents and pre-stain treatment removers, unless specifically stated otherwise).

² Commission Decision (2011/263/EU) of 28 April 2011 on establishing the ecological criteria for the award of the EU Ecolabel to detergents for dishwashers. Official Journal of the European Union, L111, 30.4.2011. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:111:0022:0033:EN:PDF>.

³ Commission Decision (2011/382/EU) of 24 June 2011 on establishing the ecological criteria for the award of the EU Ecolabel to hand dishwashing detergents. Official Journal of the European Union, L169, 29.6.2011. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:169:0040:0051:EN:PDF>.

⁴ Commission Decision (2011/264/EU) of 28 April 2011 on establishing the ecological criteria for the award of the EU Ecolabel for laundry detergents. Official Journal of the European Union, L111, 30.4.2011. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:111:0034:0047:EN:PDF>.



2.5 Cleaning Services

Additionally the report considers environmental impacts related to the carrying out of cleaning services.

3 Market Availability

A Commission study on the costs and benefits of GPP carried out in 2007⁵ considered the availability of ecolabelled cleaning products within selected EU member states (Sweden, Germany, Spain and Czech Republic). This study found that, at that time, the only product group with a significant number of ecolabelled products (EU Ecolabel, Nordic Swan, Bra Miljöval or other national label) was all-purpose cleaners (including sanitary cleaners and window cleaners). The highest number of ecolabelled products was available in Sweden, probably reflecting the regional or national labelling schemes.

Since this study was carried out, the number of products with EU Ecolabel has increased significantly. There is a year on year increase in the number of licences for the EU Ecolabel, with the largest product group being all-purpose cleaners followed by hand dishwashing detergents, laundry detergents and dishwashing detergents. Details of cleaning products that have been awarded the EU Ecolabel can be found in the European Ecolabel Catalogue⁶.

4 Key Environmental Impacts (LCA)

4.1 Raw material extraction and processing

The key environmental impacts here are related to natural resource depletion and climate change resulting from energy consumed during raw materials processing. For example many of the substances used in cleaning products are derived from non-renewable sources (e.g. derived from petrochemical streams). There is also potential for impact on the environment resulting from release of toxic substances and waste from the process.

4.2 Manufacture/formulation

Cleaning products are formulated mixtures of several different types of raw materials. During their manufacture impacts on the environment can occur from the energy and water consumed in the process and from the release of substances to the environment. The impacts that a substance has on the environment once released depend upon its toxicity and its potential to persist or accumulate in the environment. A brief summary of the main types of substances that are typically used in the manufacture of cleaning products is given below.

There are also impacts on the environment from manufacture of packaging related to energy consumption, water consumption and emissions to the environment.

⁵ Study on costs/benefits of Green Public Procurement in Europe, Öko-Institut & ICLEI, 2007, available at: http://ec.europa.eu/environment/gpp/index_en.htm.

⁶ <http://www.eco-label.com/>.



4.2.1 Surfactants

Surfactants (surface active agents) are the most important ingredients in cleaning products due to their capability to wet hydrophobic surfaces, remove dirt and keep it in suspension.

Four types of surfactants exist:

- Anionic surfactants are negatively charged in aqueous solutions. Soap is maybe the most well known anionic surfactant. They are mainly used in laundry detergents, cleaning and dishwashing detergents as well as in personal care products.
- Non-ionic surfactants do not ionise in aqueous solutions. They are mostly used in combination with anionic surfactants in laundry detergents, cleaning and dishwashing detergents as well as personal care products and are especially used in institutional and industrial cleaners.
- Cationic surfactants are positively charged in aqueous solution. Quaternary ammonium compounds are typical examples. Cationic surfactants are primarily applied in fabric softeners and hair care products.
- Amphoteric surfactants have both acidic and alkaline properties. They are used in personal care products, hand dishwashing detergents and all-purpose cleaning agents.

As a result of their surface-active properties, surfactants are relatively toxic to aquatic organisms and can impact on ecosystems if they are released to the environment in large amounts and do not biodegrade readily.

4.2.2 Builders

Builders are used in cleaning products to bind dissolved metal ions and support emulsification. They include amongst other things, complexing agents or chelating agents, buffering agents and fillers and are used in cleaning agents to improve cleaning efficiency. Examples of complexing agents that have been used include ethylenediamine tetracetic acid (EDTA) and nitrilotriacetic acid (NTA). These substances not only physically join with the calcium and magnesium ions of hard water but, if they do not biodegrade, may also remobilise heavy metals stored in river sediments when they are discharged into the aquatic environment bringing the heavy metals back into the water system.

Phosphorus compounds are sometimes used as “builders” in cleaning products. Phosphorus is a major cause of “eutrophication”⁷ in water systems, though the impact depends on the wastewater treatment process and temperatures of the receiving waters in individual countries.

4.2.3 Solvents and VOCs

Organic solvents are sometimes used to enable dissolution of solid ingredients for liquid products. As many solvents evaporate relatively quickly into the air they are considered to be VOCs (volatile organic compound). VOC emissions may react with nitrogen oxides (NOx) in the presence of sunlight to produce ground level ozone and photochemical smog. When highly concentrated in the air, ozone can impair human health and can damage forests, vegetation and crops, reducing yields.

⁷ “Eutrophication” is a process whereby water bodies, such as lakes, estuaries, or slow-moving streams receive excess nutrients that stimulate excessive plant growth.



Some other ingredients in cleaners such as organic acids, organic alkali or preservatives are volatile too (e.g. formic acid, ammonia or formaldehyde), and aerosol propellants in spray formulations contribute to the total VOCs. VOCs are one possible source of indoor pollution. VOCs may also cause headaches, fatigue or irritation to the eyes, nose, throat, lungs or skin. Additionally, some solvents can also be absorbed through the skin (e.g. butylglycol).

4.2.4 Bleaching agents

Bleaching agents are used in cleaners for hygienic purposes but also to remove stains (urinary salts) and to bleach textiles (laundry detergents). These can be based on reactive chlorine compounds or reactive oxygen compounds (e.g. peroxides and percarbonates). In some cases they may attack sensitive surfaces (e.g. sodium hypochlorite (NaOCl) may corrode metal surfaces). Halogenated organic compounds may be formed by the reaction of active chlorine with organic substances and thus contributing to the adsorbable organic halogen (AOX)-load of the aquatic environment. Some of these halogenated compounds may be toxic and slowly degradable in the aquatic environment.

4.2.5 Biocides/Preservatives

Biocides are chemical agents that prevent the growth of micro-organisms in the product and are typically used in liquid products that do not have extreme pH or high concentrations of surfactants or solvents in order to preserve the product (i.e. as preservatives). Most substances used as preservatives may also be used as disinfectants. Some biocides are bioaccumulative, i.e. they accumulate in food.

4.2.6 Enzymes

Enzymes are relatively common ingredients in laundry and dishwasher detergents. They are used to assist in the cleaning process by degrading proteins, carbohydrates and fats etc. in the stains. The addition of enzymes to cleaning products can reduce the total volume of substances in such products and/or facilitate washing at lower temperature, thus reducing the overall environmental impact.

4.2.7 Fragrances

Fragrances may consist of hundreds of constituents or also single chemical substances or herbal extracts that are added to the product. They receive attention because of their potential hazard to health and also due to their bioaccumulative potential. Unfortunately, data about the environmental fate and inherent properties of perfumes is very incomplete. Moreover, the kind of fragrance is usually not identified in frame formulas.

Most manufacturers who use perfume in their formulations refer to the Code of Practice of IFRA (International Fragrance Association)⁸.

⁸ http://www.ifraorg.org/en-us/code_of_practice_1.



4.2.8 Other substances

Many other substances may be added to formulated products, depending on the specific application of the product. These can include colourants, anti-deposition agents, substances for control of foaming, corrosion inhibitors and optical brighteners amongst others.

4.3 Distribution

The key environmental impacts here are related to the climate change resulting from the energy consumption of the transport used. Products that are used without dilution, for example ready to use all-purpose cleaners, may have a higher impact per function unit than concentrated products that are diluted on-site resulting from the transportation of larger amounts of water as part of the formulation.

4.4 Use

An important environment impact during the use of cleaning products is on climate change resulting from the energy consumed in heating water used for cleaning. This is particularly the case for laundry detergents and dishwasher detergents which but will also apply to other cleaning products where heated water is used.

In recent years there has been an increase in the availability of laundry detergents that are effective at low temperatures. LCA analysis of examples of these types of products⁹ has demonstrated a significantly reduced impact on the environment resulting from the lower energy consumption during the washing process however it was noted that for heavily soiled clothes washing at elevated temperatures is still needed and washing at higher temperatures may be important in relation to specific hygiene demands (for both laundry detergents and particularly dishwashing detergents).

Another environmental impact during the use stage will result from the water consumed¹⁰.

Some cleaning products may have adverse health effects on those using them. This can include skin complaints, eye injuries from splashing, and allergies. For example for fragrances, the main hazard to health is their allergic potential. Contact allergy to perfume occurs with a relatively high incidence. Certain enzymes may cause allergic skin reactions in sensitive groups. Some solvents and other ingredients contain VOCs which can cause indoor air pollution and consequent health problems for users (see 4.2.3 above).

⁹ Comparative Life Cycle Assessment (LCA) of Ariel “Actif à froid (2006), a laundry detergent that allows to wash at colder wash temperatures, with previous Ariel laundry detergents (1998, 2001). Comparing the environmental burdens of home laundry detergents products and laundry habits in France 1998-2006. Procter and Gamble, April 2006 (http://www.scienceinthebox.com/en_UK/sustainability/casestudies_en.html).

¹⁰ Comparative Life Cycle Assessment Study: 3 Cleaning Products for Kitchen Surfaces, French Study, An Iso-compliant life cycle assessment study of hard surface cleaning products used in the kitchen. Association Francaise des Industries de la detérgence, de l’entretien, de l’hygiène et des produits d’hygiène industrielle.



4.5 Disposal

Detergent products are generally released into the drainage system after use. In many cases, the waste water will be treated in municipal waste water treatment plants which will remove many of the substances present by physical or biological processes. However, the treated wastewater effluent may contain low concentrations of substances originating from detergents and this has potential to impact on the environment once discharged to rivers and lakes, particularly if toxic and/or non-biodegradable substances are present. In addition, sewage sludge from waste water treatment plants may also contain substances used in cleaning products and this potentially provides a route to agricultural soil where digested sludge is used as a fertilizer. The impact of the substances released to the environment is dependent to a large extent on their toxicity to the environment and human health and whether or not they biodegrade quickly in the environment.

Another potential impact on the environment is from disposal of waste packaging. As with any consumer product, it is important to consider packaging – the quantity and type of packaging used, and the opportunities for refilling.

4.6 Reducing the key impacts

Overall, the key impacts from the lifecycle of cleaning products relate to climate change, , impacts on human health, ecotoxicity, eutrophication,,water consumption and waste generation.

These impacts can best be reduced by minimizing the energy consumed in heating the water used during the cleaning, excluding or limiting certain substances in the products, applying correct product doses, optimizing the way a cleaning service is performed, minimizing the packaging.

5 Cost Considerations

A Commission study on the Costs & Benefits of GPP in 2007¹¹ examined the cost implications of purchasing green (ecolabelled) cleaning products on the overall cleaning budget.

Significantly between 92% and 97% of the money spent on cleaning is spent on staff costs, and therefore differences in product prices have a largely minimal impact on overall cleaning budgets.

With regards to the products themselves a mixed picture emerged as the following table demonstrates.

¹¹ *Study on costs/benefits of Green Public Procurement in Europe*, Öko-Institut & ICLEI 2007, available at: http://ec.europa.eu/environment/gpp/index_en.htm.

**Table 2. Cost differences between green and non-green products¹¹**

Country	Price difference between green and non-green product (%)		
	All-purpose and floor care products	Sanitary cleaning products	Window cleaners
Sweden	-74% (i.e. green product less expensive)	-82%	-9%
Germany	+36%	+148%	-36%
Spain	+131%	+92%	-94%
Czech Republic	+158%	+2%	-

These differences reflect the advanced development of the market for green cleaning products in the Nordic countries, and indicate that in countries where the market is not so well developed, products currently cost substantially more.

As this survey was published in 2007 the cost differences relate to older data and may not reflect the current cost differences.

Reconsidering the cleaning frequency for different parts of the building may be beneficial both in terms of human resources and substances needed for carrying out the service.

6 Public Procurement Needs

Almost all public buildings will require cleaning. Public procurement activities may cover the following areas:

- Maintenance cleaning of buildings, floors, walls, sanitary facilities etc. carried out on a regular basis.
- Cleaning of windows. This is typically carried out less often than maintenance cleaning.
- Dishwashing. This can either be carried out by hand using hand dishwashing detergents or by dishwashing machines using dishwasher detergents and can vary in scale and frequency depending on the facility.
- Washing of laundry.

Cleaning activities can be carried out by the public authority itself or the authority can contract the cleaning activity to a cleaning company. In the first case, the public authority themselves may be responsible for the regular procurement of the cleaning products used whereas in the second case the cleaning company may be responsible for the regular procurement of the cleaning products used. Procurement of the cleaning service itself is likely to be carried out less frequently but will have an influence on the environmental impact from the cleaning products and service over the lifetime of the contract. It is therefore important that the GPP criteria consider both the procurement of cleaning products and the procurement of cleaning services.

The main environmental impacts arise directly or indirectly, from the amount of cleaning product used, from the substances present in the cleaning products and the energy requirements of the cleaning process. Therefore the choice of cleaning product or cleaning service can have a large impact on reducing the environmental impact from cleaning



processes.

7 Conclusion and Summary

The EU Ecolabel identifies and considers the main impacts on the environment from use of all-purpose cleaners, sanitary cleaners, window cleaners, hand dishwashing detergents, detergents and rinse aids for dishwashers and laundry detergents and pre-stain treatment removers. Other Type I ecolabels for cleaning products are available and these generally consider similar impacts as the EU Ecolabel (see section 11 and Annex I). An increasing number of cleaning products are available in the EU that meet the criteria for the EU Ecolabel, particularly in the area of all-purpose and sanitary cleaners.

The main costs associated with cleaning activities relate to staff costs and so differences in product prices are likely to have only a relatively small impact on overall cleaning costs.

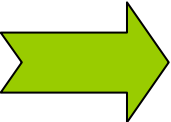
An important environmental impact associated with cleaning products and service relate to the hazardous substances that may be present in certain cleaning products. Such hazardous substances can include certain types of non-biodegradable surfactants, builders, phosphorus, VOC, chlorine, biocides and fragrances. One way to reduce the environmental impact of cleaning products is to therefore consider products which do not contain such hazardous substances. It is also relevant to ensure that appropriate dosages and temperatures are used or to consider the use of cleaning techniques that do not use chemical substances. A reduction in substance use will also reduce the environmental impact from resource, energy and water consumption over the manufacturing lifecycle.

Packaging is also an important consideration in relation to the environmental impacts of cleaning products. Reducing the amount or type of packaging, or the use of refillable systems, can lead to a reduction in the environmental impact.

8 Recommended Core and Comprehensive GPP Criteria

It is proposed to set core and comprehensive criteria for electricity. The proposed GPP criteria are designed to reflect the key environmental risks. This approach is summarised in the following table:



Key Environmental Impacts	GPP Approach
<ul style="list-style-type: none"> • Climate change • Human health • Ecotoxicity • Eutrophication • Water consumption • Waste generation 	 <ul style="list-style-type: none"> • Use cleaning products that are effective at lower temperatures • Avoid certain hazardous substances in the product • Avoid phosphorus and limit biocides in the product • Limit the overall "critical dilution volume" of the product; • Provide information on recommended dosages • Decrease the use of products through reviewing cleaning plans and techniques • Improve the training of cleaning staff • Decrease the quantity of packaging used • Ensure the recyclability of the packaging used and the use of recycled packaging

8.1 Recommended criteria for the direct purchase of cleaning products

The **Core** criteria focus on the most significant environmental and health related impacts of the product group, and should also be relatively easily verifiable by contracting authorities. The recommended Core criteria are based on the analysis carried out in section 11 and include criteria based on the fitness for use, limiting the most hazardous substances present in the products and some basic packaging criteria. Where possible, the Core criteria have been related to sources of information that should be readily available such as product labels, product safety data sheets (SDS) and other relevant technical data sheets.

For the **Comprehensive** level, a more detailed set of criteria based on a sub-set of the full EU Ecolabel criteria are recommended, covering a wider range of hazardous substances that may be present in products and limiting further packaging waste. The comprehensive criteria may require additional verification effort over the core criteria.

The full recommended criteria sets can be found in the [Product Sheet](#).

8.2 Recommended criteria for cleaning services

Where cleaning services are contracted out to a private company it is possible to define the core environmental characteristics of the products they will use in carrying out the service. This forms the basis of the **Core** criteria.

For the **Comprehensive** criteria, reference is made to the Comprehensive criteria for cleaning products used, as well as to other criteria relating to how the service is managed with regard to health, safety and environmental issues. The criteria also cover the capacity of the contractor to perform the contract in an environmentally sound way.



The full recommended criteria sets can be found in the [Product Sheet](#).

9 Verification Issues

9.1 Information sources

The procurement of environmentally less impactful cleaning products may raise some difficulties for contracting authorities to both identify and judge compliance with environmental criteria, given the complexity of the substance information to be assessed.

The main source of information for contracting authorities is the safety data sheet (SDS). Producers are required by law (see section 10 below) to provide users with detailed health, safety and environmental information on all their products, using a common format. There are also specific requirements for indicating the content of certain ingredients of cleaning products on the packaging for products sold to the general public.

However, not all important environmental and health concerns are fully dealt with by the SDS or other standard accompanying information – some issues covered by the EU Ecolabel related to packaging for example may not be covered in the SDS.

Furthermore, classified hazardous ingredients need only be mentioned in the SDS if they make up higher than a certain percentage of the weight of the final product. Below this weight threshold the supplier does not need to include the information on the SDS. The weight threshold varies with the endpoint considered and can be considerably higher than that used by the EU Ecolabel.

Contracting authorities will need to consider other forms of proof, such as self-declarations and test reports.

The criteria recommended are based on the standards set by the EU Ecolabel. Products carrying the Ecolabel will be compliant. However the contracting authority must also accept other "appropriate" means of proof, such as a technical dossier of the manufacturer or a test report from a recognised body.

9.2 Differences between the EU Ecolabel and other European Ecolabels

The various ecolabels use a slightly different set of criteria. A detailed comparison between the EU Ecolabel and the Nordic Swan is given in Annex1. In practical terms this makes it difficult to specify a set of comprehensive criteria for which both labels could be recognised as proof of compliance. This is important as the availability of products carrying either label will likely vary significantly in different Member States. The only practical solution seems to be to state that products that meet the criteria of any ISO Type I ecolabel established in one of the EU's Member States would also meet the comprehensive criteria.

9.3 Verification of additional cleaning service requirements

Contracting authorities will need to rely on contractors supplying appropriate documentation of their capacity to take the necessary environmental management measures, and for these



measures to be properly documented and reported during the contract. As such, when setting criteria, it is important to outline what documentation should be provided. If the contractor has in place a specific environmental management system (EMS) or is in the possession of an ecolabel for cleaning services, this can be used to demonstrate compliance if relevant information is included.

10 Relevant European Legislation and Policies

European legislation both provides absolute restrictions on the use of substances with certain properties, and rules on the information which producers must provide users with, as indicated below. Recently, the regulatory framework of the chemicals sector has been changed significantly. In particular Regulation (EC) 1907/2006¹² on the registration, evaluation, authorisation and restrictions of chemicals (commonly known as the REACH Regulation) entered into force on 1 June 2007. It provides a regulatory framework for the collection of information on the properties of substances on the European market, and also for future restrictions on their use. The European Chemicals Agency (known as ECHA), based in Finland, acts as the central point in the REACH system: it runs the databases necessary to operate the system, co-ordinates the in-depth evaluation of suspicious substances and maintains a public database in which consumers and professionals can find hazard information.

This framework provides not only a rigorous testing and restriction procedure for all substances on the European market, but also provides a highly valuable centralised information source which could be used by public purchasers. However, it will take some years from its instigation before the system will be fully operational and comprehensive.

Regulation (EC) No 1272/2008¹³ (commonly known as the classification, labelling and packaging or CLP Regulation) and Regulation (EC) 1907/2006 (the REACH Regulation), which amend and repeal Directives 67/548/EEC¹⁴ and 1999/45/EC¹⁵, require producers and suppliers of dangerous substances in EU member states to classify the harmful properties of their substances and to provide industrial and professional users with detailed health, safety and environmental information and advice about their products. All chemical products sold must be accompanied by material safety data sheets (SDS). If the products contain ingredients (above a certain percentage of the weight of the final product) which are classified as dangerous, then this information must be included in the SDS and also on the product label.

The CLP Regulation introduces what is known as the Globally Harmonised System (GHS) for classification and labelling of substances and mixtures into the EU. The GHS is a UN initiative which aims to harmonise the information related to human health and environment provided by manufacturers worldwide, given the global nature of the trade.

¹² Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

¹³ Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

¹⁴ Directive 67/548/EEC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.

¹⁵ Directive 1999/45/EC concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.



The requirements of the CLP Regulation are being gradually phased in up until 2015. In the meantime, the older systems for classification and labelling of substances (based on Directive 67/548/EEC) and preparations (mixtures) (based on Directive 1999/45/EC) will operate in parallel. Therefore up until 1st June 2015 two different classification and labelling systems will exist that will apply to cleaning products.

The main differences between the two systems is that the classification of hazardous properties under the CLP Regulation uses a series of Hazard Class and Category Codes and Hazard Statements whereas under the older system the classification of hazardous properties was based on indications of danger and Risk-phrases, or R-phrases. In addition, the CLP Regulations establish a new database, known as the classification and labelling inventory, for substances. This database will eventually hold the classification given to substances produced or supplied in the EU. The database is expected to be available from 2011 on the website of the European Chemicals Agency: http://echa.europa.eu/clp/c_1_inventory_en.asp

Many substances have already been analysed for their properties in this regard, and may be issued with a hazard warning (e.g. T+: Toxic, N: dangerous for the environment), together with a R-Phrase indicating the precise nature of the risk (e.g. R26: very toxic by inhalation, R50: very toxic to aquatic organisms). Under the CLP system Hazard Class and Category Codes (e.g. Acute Tox. 2, Aquatic Acute 1) and Hazard Statements and Codes (e.g. H330 - fatal if inhaled, H400 -Very toxic to aquatic life) are used instead.

The REACH Regulation also restricts the use of certain hazardous substances. For example Annex XII of Regulation 1907/2006 and its subsequent amendments restricts the presence of certain hazardous substances in consumer products. It is stated that substances classified as carcinogen category 1A or 1B or mutagen category 1A or 1B or toxic to reproduction category 1A or 1B may not be placed on the market for sale to the general public, either as substances themselves or in mixtures above specified concentration limits (usually by default $\geq 0.1\%$ for carcinogenic and mutagenic substances and $\geq 0.3\%$ for substances that are toxic to reproduction but the actual limits can be above or below these values for specific substances). However this would not necessarily apply to cleaning products for professional use. The use of nonylphenol ethoxylate in cleaning products at concentrations higher than 0.1% by mass is also now subject to a restriction implemented through the REACH Regulation. This restriction applies to all cleaning products used in domestic cleaning and cleaning products used in industrial and institutional cleaning except for products used in controlled closed dry cleaning systems where the washing liquid is recycled or incinerated or used in cleaning systems with special treatment where the washing liquid is recycled or incinerated.

Regulation (EC) No 648/2004¹⁶ updates and expands restrictions on the testing and sale of detergents. In particular it aims to increase the protection of the aquatic environment against the harmful effects of surfactants¹⁷, through stricter testing of biodegradability. Now, only surfactants meeting strict biodegradability standards can be used in cleaning products. In certain situations producers can apply for a derogation (exemption) from this but such derogations would only be granted following a risk assessment and will set conditions or

¹⁶ Regulation (EC) No 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents.

¹⁷ Surfactants (surface active agents) are the most important ingredients in cleaning products, due to their capability to wet hydrophobic surfaces, remove dirt and keep it in suspension.



limitations of use. In practice, such products would rarely be available to public consumers.

The same Regulation also sets legal requirements for listing of ingredients on the packaging or other documentation. Percentage ranges (<5%, 5% to <15%, 15% to <30% and 30% or more) are used to indicate the content of the following constituents when they are present at above 0.2% by weight: phosphates, phosphonates, anionic surfactants, cationic surfactants, amphoteric surfactants, non-ionic surfactants, oxygen-based bleaching agents, chlorine-based bleaching agents, EDTA (and its salts), NTA (and its salts), phenols and halogenated phenols, paradichlorobenzene, aromatic hydrocarbons, aliphatic hydrocarbons, halogenated hydrocarbons, soap, zeolites and polycarbonates. In addition, enzymes, disinfectants, optical brighteners, perfumes and preservatives have to be listed irrespective of their concentration and allergenic fragrances have to be listed if present at above 0.01% by weight. Lists of ingredients are also required to be provided on the manufacturer's website in many cases. Information on the recommended dosages has to be provided on the packaging of all laundry detergents sold to the general public.

Council Directive 76/768/EEC on cosmetic products and its subsequent amendments and Council Directive 94/36/EC of 30 June 1994 on colours for use in foodstuffs and its subsequent amendments are relevant regulations that apply to cleaning products. These Directives restrict the use of, and set strict labelling requirements for certain dyes and fragrances.

11 Existing Standards & Ecolabels and other information sources

There are a number of Type I¹⁸ ecolabels for cleaning products – including EU Ecolabel, Nordic Swan and Bra Miljöval. Although similar in some aspects, there are also important differences between the labels, both in terms of the aspects covered and the wording used. Annex 1 compares the EU Ecolabel criteria and the Nordic Swan criteria.

11.1 EU Ecolabel environmental and health criteria

The following analysis is based upon the criteria of the EU Ecolabel, whilst indicating where differences exist with the Nordic Swan. It also differentiates between the four product groups covered by the EU Ecolabel.

The objective of the analysis is to identify the criteria that can be recommended as Core criteria and Comprehensive criteria. Core criteria need to provide a simple set of criteria which can be used by all and should not involve substantial verification efforts by the contracting authority. Although it is unlikely that all experts will agree on what the most important environmental aspects are, this issue of practicality needs to be borne in mind, and

¹⁸ The International Standards Organization (ISO) has categorised the different kind of product labels on the market. "Type I" labels are those where the underlying criteria are set by an independent body and which are monitored by a certification and auditing process. As such they are a highly transparent, reliable and independent information source for procurers.

Type I labels can be used by contracting authorities as a source of criteria, and also as one means of verification since they comply with the conditions set forth in the Public Procurement Directives as regards the possible use of ecolabel criteria to describe a certain product, namely that the criteria are developed based on scientific information, the ecolabel is based on a process in which all relevant stakeholders are part, and the ecolabel is open to all interested parties.



has informed the selection here.

11.1.1 Toxicity of products to aquatic organisms

Labelled all-purpose products must not exceed a certain level of “critical dilution volume” (CDV_{chronic}). This figure is based on a calculation method using the chronic toxicity and degradation factors of the ingredients included. It provides a good overall measure of the potential negative environmental impact of a product on aquatic ecosystems.

CDV_{chronic} is also applied for dishwashing detergents, hand dishwashers, and laundry products, although using different limit values.

A similar system is applied by the Nordic Swan but utilising both a CDV_{chronic} and CDV_{acute} (based on the acute toxicity) and applying different limit values.

The relevant EU Ecolabel outlines the methodology for calculation of CDV_{chronic} and spreadsheets for calculation are available on the EU Ecolabel website (http://ec.europa.eu/environment/ecolabel/index_en.htm). The information required may not always be straightforward for suppliers to collect, although the manufacturers of products usually have the information required for its calculation. The toxicity to aquatic organisms is considered indirectly by other criteria related to readily biodegradable (see section 11.1.2) and the exclusion of certain substances (see 11.1.3).

Conclusion: The toxicity to aquatic organisms is an important parameter and so the CDV_{chronic} should be considered in the Comprehensive criteria. However for the Core criteria this parameter may be difficult to verify. Therefore it is proposed to not include CDV_{chronic} in the Core criteria.

11.1.2 Biodegradability of surfactants

Each surfactant used in the product shall be readily biodegradable. Labelled all-purpose cleaners must not contain non-readily biodegradable surfactants. Surfactants that are not biodegradable under anaerobic may be used in the product within specified limits provided that the surfactants are not classified as H400 or R50.

Similar criteria apply to hand dishwashing detergents.

For dishwashers and laundry detergents the criteria are given in terms of biodegradability of all organic substances rather than specifically surfactants alone. For both types of products small amounts of non-readily biodegradable and/or not anaerobically degradable organics are acceptable.

The Nordic Swan and Bra Miljöval have requirements that the surfactants used must be readily biodegradable and anaerobically biodegradable.

As noted in section 10 above, Detergents Regulation 648/2004 allows only for the use of surfactants meeting strict biodegradability standards in all detergents¹⁹ on the market. As

¹⁹ Under this Regulation a ‘detergent’ means any substance or preparation containing soaps and/or other surfactants intended for washing and cleaning processes.



such, the criterion on ready-biodegradability should not be required for the Core criteria or Comprehensive criteria.

Anaerobic degradability (i.e. the ability of a substance to biodegrade in an oxygen-free environment) is however not covered by the above Directive. There is some debate about the potential impacts relating to non-anaerobically degradable ingredients, and to some extent the impact depends on the type of waste water processing, and the likelihood of substances ending up in anaerobic environments. The Commission has carried out a review on anaerobic biodegradation of surfactants²⁰ and this concluded that a lack of anaerobic degradation does not necessarily correlate with an increased risk to the environment and that anaerobic biodegradability should not be used as an additional pass/fail criterion for the environmental acceptability of surfactants.

Conclusion: As the major impacts resulting from lack of aerobic biodegradation of surfactants is already covered by existing legislation there is no need to include this in the Core criteria or Comprehensive criteria.

Non-anaerobic degradability is a controversial topic and there is no clear cut evidence that increased impacts the environment occur in all cases from release of non-anaerobically degradable surfactants. Therefore it is proposed not to include it in either the Core or Comprehensive criteria.

11.1.3 Dangerous, hazardous or toxic substances or preparations

A number of specific ingredients and ingredients classified with certain Risk-phrases or Hazard Statements cannot be contained in all-purpose products in order to meet the EU Ecolabel criteria. These are split into 4 areas:

- Specific ingredients: Alkyl phenol ethoxylates (APEOs), ethylenediaminetetraacetic acid (EDTA) and its salts, 5-bromo-5-nitro-1,3-dioxane, 2-bromo-2-nitropropane-1,3-diol, diazolinidylurea, formaldehyde, sodium hydroxy methyl glycinate, nitromusks and polycyclic musks. These cannot be present at a weight above 0.01% of the final product.
- Quaternary ammonium salts that are not readily biodegradable. These cannot be present at a weight above 0.01% of the final product.
- Ingredients classified with Risk-phrases R23, R24, R25, R26, R27, R28, R29, R31, R32, R39/23, R39/24, R39/25, R39/26, R39/27, R39/28, R40 (except for NTA as an impurity (<1%) in MGDA and GLDA so long as the total concentration in the final product is <0.1%), R39-41, R42 (except for enzymes), R43 (except for enzymes), R45, R46, R48/20, R48/21, R48/22, R48/23, R48/24, R48/25, R49, R50, R50/53, R51/53, R52/53 (except for fragrances), R53, R59, R60, R61, R62, R63, R64, R65, R68, R68/20, R68/21, R68/22 or with Hazard Statements corresponding to EUH029, EUH031, EUH032, EU059, EUH070, H300, H301, H304, H310, H311, H317 (except for enzymes), H330, H331, H334 (except for enzymes), H340, H341, H350, H350i, H351 (except for NTA as an impurity (<1%) in MGDA and GLDA so long as the total concentration in the final product is <0.1%), H360D, H360F, H360FD, H360Fd, H360Df, H361f, H361d, H361fd, H362, H370, H371, H372, H373, H400, H410, H411, H412 (except for fragrances), H413. These cannot be present at a weight above 0.01% of

²⁰ Report from the Commission to the European Parliament and the Council pursuant to Article 16 of Regulation (EC) No 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents, concerning anaerobic biodegradation. COM(2009) 230 final.



the final product however surfactants classified as H400 or R50 are allowable provided the concentration in the product is $<25\%/M$ where M is the M-factor established in accordance with Regulation (EC) No 1272/2008.

- Substances identified under Article 57 of Regulation (EC) No 1907/2006 as substances of very high concern on the basis of their carcinogenicity, mutagenicity or toxicity to reproduction, or their persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) properties or on the basis that they present an equivalent level of concern to substances with these properties. These cannot be present at a weight above 0.01% of the final product

The criteria for the other EU Ecolabel product groups are largely similar to the above, however the specific ingredients that cannot be present are limited to phosphates, EDTA and nitromusks and polycyclic musks for laundry detergents and phosphates, diethylene triamine pentaacetic acid (DTPA), perborates, reactive chlorine compounds, EDTA and nitromusks and polycyclic musks for dishwasher detergents. In addition quaternary ammonium salts are not specifically excluded for laundry detergents and dishwasher detergents. For the substances classified with certain Risk-phrases or Hazard Statements additional derogations are given for laundry detergents in relation to bleach catalysts classified as R42, R43, H334 or H317 and optical brighteners in heavy duty laundry detergents classified as R53 or H413, and for detergents for dishwashers and laundry detergents surfactants classified as H400 or R50 are allowable provided that concentration in the product is $<25\%$.

The Nordic Swan also bans the use of EDTA, NTA and APEOs and substances classified as carcinogenic, mutagenic, toxic to reproduction and sensitising but places different limits than the EU Ecolabel on substances classified as dangers for the environment. The Nordic Swan also has criteria based on the classification of the product as well as the individual ingredients contained.

The Risk-phrases and Hazard Statements cover the most significant environmental and health aspects related to the product group (toxicity to the aquatic environment, carcinogenic, mutagenic and harmful to reproduction), and some specific substances with a high negative environmental impact in relation to their toxicity frequently used for these product groups.

EDTA and APEOs have now been almost completely phased out of cleaning products following environmental concerns, and are therefore not as critical to include now. Other substances specifically mentioned such as quaternary ammonium salts, musk xylene, and musk ketone, are classified with Risk-phrases and Hazard Statements in the list above, and so would be anyway excluded in weights of above 0.01% if the ecolabel criteria would solely consider the above mentioned Risk-phrase restrictions.

The substances of very high concern identified under Article 57 of Regulation (EC) No 1907/2006 will include substances that are carcinogenic, mutagenic or toxic to reproduction, substances that are persistent, bioaccumulative and toxic (PBT-substances), substances that are very persistent and very bioaccumulative (vPvB-substances) and substances that present an equivalent level of concern to these substances. These are considered to be the substances that present the highest hazard to human health and/or the environment. Of these, the substances that are carcinogenic, mutagenic, toxic to reproduction or are PBT will also likely be classified with one of the listed Risk-phrases and Hazard Statements given above. The same may not always be true for vPvB-substances or substances of an equivalent level of concern. Therefore, although the exclusions based on Risk-phrases and Hazard Statements alone will exclude most of the substances of very high concern, it may not necessarily



exclude all of the substances identified under Article 57 of Regulation (EC) No 1907/2006.

The substances of very high concern that have been identified are listed on the Candidate List on the ECHA website (available at http://echa.europa.eu/chem_data/authorisation_process/candidate_list_en.asp). This list is subject to regular updates. The inclusion of a substance on this list may impose certain obligations on companies supplying the substance either on its own, in mixtures/preparations such as cleaning products or in articles. Of most relevance here is that suppliers of mixtures/preparations that are not themselves classified as dangerous have an obligation to provide the recipients of the mixture/preparation, at their request, with a safety data sheet if the mixture contains at least one substance on the Candidate List and the individual concentration of this substance in the mixture is $\geq 0.1\%$ by weight for non-gaseous mixtures if the substance is persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB). This means that information on the presence of PBT or vPvB substances in cleaning products can be requested from the supplier but that the information only has to be provided if the concentration is $\geq 0.1\%$ by weight. As the criteria used in the EU Ecolabel relate to a lower concentration limit of 0.01% the information available from Regulation (EC) No 1907/2006 may not be sufficient to verify that a given cleaning product does not contain PBT or vPvB substances at this level.

The use of Risk-Phrases and Hazard Statements presents the most comprehensive approach to ensure that the worst environmental and health related impacts of the product group are avoided. Furthermore, it should be possible for suppliers to provide this information in an understandable way for contracting authorities, however this may involve additional verification effort. Information on the classification and labelling of specific substances can be found from a number of sources including the following.

- The ECHA Classification and Labelling Inventory available at http://echa.europa.eu/clp/c_1_inventory_en.asp (due to be on-line during 2011).
- The ECHA database on information on registered substances available at <http://apps.echa.europa.eu/registered/registered-sub.aspx>.
- The EU Harmonised Classification and Labelling database available at <http://ecb.jrc.ec.europa.eu/esis/index.php?PGM=cla>. This database list only substances for which an EU-wide harmonised classification has been assigned.
- Product/material safety data sheets.

The use of the Risk-Phases and Risk-Phrases and Hazard Statements within the Comprehensive criteria would also cover most, but not necessarily all, of the other hazardous substances listed in the relevant EU Ecolabel criteria. The substances that may not be covered by this could potentially include certain vPvB substances identified under Regulation (EC) No 1907/2006. However, although information on the presence of these substances in cleaning products at concentrations of 0.1% and above may be obtainable from Regulation (EC) No 1907/2006 it is unlikely that this information will be readily available for such substances at the lower level of 0.01% required for the EU Ecolabel and so would be more difficult to verify, particularly for the Core criteria.

For the Core criteria the Ecolabel criteria may be too difficult to verify easily as it requires knowledge of the ingredients present down to a level of 0.01% by weight and in some cases also knowledge of the function of the ingredient (for example biocides). In many cases the readily available information that will be available to the contracting authority on the substances present in the cleaning product will be limited to the ingredients list on the



product label, the substances listed on the product safety data sheet and any other technical product data, such as ingredients lists available on the product manufacturer's website. Depending on the substance, these sources are likely to list ingredients down to <1% of the product but not necessarily down to 0.01%. Therefore for the Core criteria, for ease of verification, it is recommended that the criteria is based on the absence of the most hazardous substances, particularly the substances of very high concern identified under Regulation (EC) No 1907/2006 from the ingredients listed in these sources. Manufacturers and suppliers of cleaning products are also required, on request, under Regulation 1907/2006 to provide information on substances of very high concern present in their products at concentrations of 0.1% and above via a safety data sheet.

Conclusion: Use the Risk-phrase and Hazard Statements restrictions along with the substances listed in the candidate list as the basis of the Comprehensive criteria, to cover the most significant environmental and health impacts resulting from the emissions of substances during manufacture and use of detergents.

For the Core criteria it is recommended that a more pragmatic approach is taken based on the absence of substances of very high concern from the list of ingredients.

11.1.4 Biocides

Labelled all-purpose products may only use biocides to preserve the product. In addition, if they are classified as H410, H411, R50/53 or R51/53 (which most are), they are permitted only when their bioaccumulation potentials are characterized by a log Pow (log octanol-water partition coefficient) <3.0 or an experimentally determined bioconcentration factor (BCF ≤100). The same criteria are applicable for hand-dishwashing. For dishwasher and laundry detergents a derogation is given for preservatives classified as H410, H411, H412, R50/53, R51/53 or R52/53 which means these types of preservatives are allowable.

The Nordic Swan has similar criteria as the EU Ecolabel for all-purpose cleaners, but with a slightly different limit for the bioaccumulation potential.

Bioaccumulation is an important factor to consider, alongside toxicity and biodegradability with regards to the environmental impact from substances in the environment as it can result in transfer into the food chain.

Conclusion: Keep within the Comprehensive criteria, to address the issue of bioaccumulation. For the Core criteria this may be difficult to verify as the actual function of the biocide may not be readily evident.

11.1.5 Fragrances

In addition to banning the use of nitromusks and polycyclic compounds (as covered in 11.1.3 above), labelled all-purpose products must also only contain fragrances produced and/or handled in compliance with the code of practice of the International Fragrance Association (IFRA), which sets guidelines on product safety, relating to health issues. The code of practice is available on the IFRA website (<http://www.ifraorg.org>). In addition, fragrance substance subject to the declaration requirement provided for in Regulation (EC) No 648/2004 on detergents and which are not already excluded by the criterion related to



hazardous substances in 11.1.3 and other fragrance substances classified as H317, H334, R42 or R43 are not allowed at quantities $\geq 0.01\%$ by weight per substance.

The same criteria apply to laundry detergents, dishwasher detergents and hand dishwashing detergents, except for hand dishwashing detergents for “professional” use, where fragrances are not permitted at all.

The Nordic Swan has similar criteria.

Nitromusks and polycyclic musk compounds are covered under 11.1.3 (dangerous, hazardous or toxic substances or preparations). The verification of the fact that all fragrance ingredients are produced in compliance with IFRA standards may be difficult for purchasers to undertake, and for suppliers to demonstrate.

Conclusion: Leave out of Core and Comprehensive criteria, as partially covered elsewhere and difficult to verify.

11.1.6 Volatile organic compounds (VOCs)

All-purpose cleaners and sanitary cleaners (as sold) carrying the EU Ecolabel may not contain more than 6% by weight of VOCs with a boiling point lower than 150°C. For concentrated products to be diluted in water, the total content of VOCs with a boiling point lower than 150°C should not exceed 0.2% by weight in the washing water. For window cleaners, the final products (as sold) should not contain more than 10% by weight of VOCs with a boiling point lower than 150°C. There is no restriction for the other EU Ecolabelled product groups or for the Nordic Swan.

As many VOCs will be classified with one of the Risk-phrases covered in 11.1.3, the main impacts in this area should already be mitigated.

Conclusion: Leave out of Core and Comprehensive criteria, as principally covered elsewhere.

11.1.7 Phosphorus

Restrictions on the total quantity of elementary phosphorus are applied for labelled all-purpose products, covering all ingredients containing phosphorus (such as phosphates and phosphonates), with different limits for all-purpose cleaners, window cleaning products, and sanitary cleaners.

The criteria for laundry and dishwasher detergents restrict the acceptable quantity of phosphates. No restrictions are included for hand dishwashing detergents.

The Nordic Swan also limits all ingredients containing phosphorus, though with less strict requirements.

The EU Commission has put forward a proposal to limit the use of phosphates and other phosphorous containing compounds in household laundry detergents to a total of 0.5% by



weight by 1st January 2013²¹.

As noted under 4.2.2 above, phosphorus can have a significant impact in terms of eutrophication. In some countries water treatment is sufficient to largely mitigate these effects and in fact acts as a significant driver for the use of sludge in agriculture. However this is not the case in all countries, and where treatment is less effective phosphorus has a significant impact.

Conclusion: Include in Comprehensive criteria, as an important environmental impact area related to emissions of substances over the lifecycle of cleaning products and is also consistent with the Commission proposal to limit the use of phosphates. For the Core criteria, information on the presence of phosphates in products at concentrations above 0.2% by weight should be readily available through Regulation 648/2004 and this should be included in the Core criteria for laundry detergents and detergents for dishwashers as it should be relatively easy to verify from the product label, safety data sheet or other product documentation.

11.1.8 Corrosive properties

The EU Ecolabel for hand dishwasher detergents also bans products classified as a Corrosive (C) mixture with R34 or R35 in accordance with Directive 1999/45/EC, or as a Skin Category 1 mixture in accordance with Regulation (EC) No 1272/2008. No requirements on the corrosive properties of the products are included in the EU Ecolabel for all-purpose cleaners, laundry detergents or dishwasher detergents.

The Nordic Swan has a similar requirement for all cleaning products with the exception of professional products and WC-products for consumers if the classification is set because of pH.

Corrosive properties of a mixture mainly have an impact on the users of the products when handled without care. Such products should not pose a problem for professional users, if adequate protection measures are in place.

Conclusion: Leave out of Core and Comprehensive criteria, as not the most significant impact area, and not a concern for professional cleaning staff.

11.1.9 Total amount of chemicals and dosage

The EU Ecolabel criteria for dishwasher detergents also limits the total amount of chemicals in the diluted product (in units of g/wash), alongside restrictions on the CDV value. However, as with the CDV value in 11.1.1, this could entail verification difficulties, because specific tests may have to be applied to measure the total amount of chemicals used. Additionally, if the other proposed Core criteria are applied, the worst environmental and health hazards will be avoided as the most harmful chemicals will be excluded.

²¹Proposal for a Regulation (EU) No .../... of the European Parliament and of the Council amending Regulation (EC) No 648/2004 as regards the use of phosphates and other phosphorous compounds in household laundry detergents. COM(201) 597 final, 4.11.2010
<http://ec.europa.eu/enterprise/sectors/chemicals/documents/specific-chemicals/detergents/>.



The EU Ecolabel for laundry detergents has requirements for the recommended dosage for which should not exceed specified amounts. The dosage corresponds to the recommended dosage in g/kg wash (powders/tablets) or ml/kg wash (liquids) for a water hardness of 2.5 mmol CaCO₃/l for normally soiled textiles (heavy-duty detergents, colour-safe detergents) and lightly soiled textiles (low-duty detergents), respectively. This corresponds to a “medium” water hardness and Regulation (EC) No 648/2004 requires dosing instructions to be provided on laundry detergents sold to the general public under the same hardness conditions for standard washing machine loads of 4.5 kg dry fabric for heavy-duty detergents and 2.5 kg dry fabric for low-duty detergents. Verification of this would therefore be possible through the dosing instructions provided by the manufacturer. For stain removers, as the actual dose used will be dependent on the number of stains in any given wash-load (and the doses used will generally be small), verification of the criteria would not be straight forward and would only have a relatively small effect on reducing the overall environmental impact, this should be left out of the core criteria.

For laundry detergents the dosage is also considered in the EU Ecolabel in relation to a points scoring system. The points system also includes the climate profile (points are awarded for coldwater or low temperature products), the CDV value, aNBO and anNBO. For the EU Ecolabel a minimum of 3 points should be achieved with the maximum achievable points being 8 for coldwater products, 7 for low temperature products and 6 for other products. There are a maximum of two points available for dosage.

There are no similar requirements in the Nordic Swan.

Conclusion: The requirement on total amount of chemicals in dishwasher detergents should be left out of the core criteria as it is difficult to verify and doesn't add significantly to other criteria.

A requirement based on the dosage for laundry detergents should be included in the Core and Comprehensive criteria as it should be relatively easy to verify from the dosage instructions provided and will reduce the environmental impacts associated with the production and use of the detergent, based on limiting the maximum dose that is recommended for use. A points system for laundry detergents would be difficult to verify and so should be left out the Core and Comprehensive criteria.

11.1.10 Review

In conclusion criteria covering the exclusion of ingredients classified with certain Risk-phrases and Hazard Statements or identified as substances of very high concern (11.1.3), the bioaccumulation potential of biocides (11.1.4), the content of phosphorus (11.1.7) and the recommended dosage of laundry detergents should ensure that the principal environmental and/or health impacts of this product group resulting from emissions of substances are largely minimised.

11.2 EU Ecolabel criteria for packaging

Different criteria regarding packaging are presented in the four EU Ecolabel criteria sets. All



four sets require the products to be delivered with clear dosing instructions.

11.2.1 Weight

For all-purpose cleaners the weight utility ratio (WUR) of the primary packaging must not exceed 1.20 g per litre of solution (washing water) for concentrated products that are diluted in water prior to use or 150 g per litre of use solution for ready-to-use products. The WUR is calculated taking into account the weight of the primary packaging, the weight of non-recycled (virgin) material in the primary packing, the number of functional doses contained in the primary packaging and the number of times the primary packaging is used for the same purpose through a return or refill system.

For laundry detergents the WUR should not exceed 1.2 g/kg for powders and 1.5 g/kg for others (liquids, gels, tablets, capsules etc.) except for plastic/paper/cardboard packaging containing more than 80% recycled material.

For hand dishwashing detergents that are diluted in water prior to use the WUR should not exceed 1.2 g per litre use solution (dishwashing water).

For **dishwasher detergents** primary packaging shall not exceed 2 grams per wash.

11.2.2 Plastics and plastics labelling

For all-purpose cleaners and hand dishwashing detergents plastic materials that are used for the main container shall be marked according to Directive 94/62/EC of 20 December 1994 on packaging and packaging waste²², or DIN 6120 Parts 1 and 2 in connection with DIN 7728 part 1. If the primary packaging is made of recycled material, any indication of this on the packaging shall be in conformity with the ISO 14021 standard 'Environmental labels and declarations — Self declared claims (type II environmental labelling)'.

For dishwashing and laundry detergents plastic parts in the primary packaging shall be labelled according to DIN 6120 Part 2 or the equivalent. Caps and pumps are exempted from this requirement.

For all-purpose cleaners, dishwashing detergents, hand dishwashing detergents and laundry detergents only phthalates that have been risk assed and have not been classified with one of the Risk-phrases or Hazard Statements outlined in 11.1.3 can be used in the plastic packaging.

11.2.3 Recycled cardboard

For dishwashing detergents cardboard primary packaging shall consist of $\geq 80\%$ recycled material.

²²<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31994L0062:EN:HTML>



11.2.4 Other

For all-purpose cleaners sprays containing propellants must not be used and products packaged in trigger sprays must be sold as part of a refillable system.

11.2.5 Review

The Core criteria group has been identified on the basis of the ease of verification for the contracting authority and importance in terms of environmental and health impacts.

As such, several easy to apply packaging criteria can be selected as Core criteria:

- *All products must be delivered with clear dosing instructions*
- *Sprays containing propellants must not be used for all-purpose cleaners*
- *The cardboard packaging shall consist of ≥ 80 % recycled material for dishwasher detergents*

For the Comprehensive criteria it is recommended to also include criteria based on the packaging weight (WUR) as this will further reduce the amount of waste packaging and the environmental impacts associated with this.

11.2.6 GPP Guidance on service provision

In addition to the restriction on the substance properties of the cleaning products used, it is equally important to focus on the provision of the service. Where these services are contracted out to private companies, the competitive tendering process can be used to establish certain conditions which can impact on the amount and type of cleaning products used.

As cleaning services can be considered an area of high potential environmental impact, and where experience in environmental management can substantially reduce this environmental impact, it can be asked from bidders to demonstrate experience in environmental management.

11.2.7 Nordic Swan labelling of cleaning services

The Nordic Swan scheme includes labelling of cleaning services. The extensive criteria cover a number of different areas. There is a set of mandatory requirements which the service must fulfill if it is to be labelled with the Nordic Swan. In addition the service is awarded points for a number of aspects, with a minimum points score which must be achieved for in order to receive the label.

Both the mandatory requirements and additional aspects provide a possible source for GPP criteria in either the specifications or award phase.

Mandatory requirements:

- Clear calculation of the area cleaned, including the areas requiring specialist cleaning
- for chemicals:
 - Supplier instructions and safety data sheets
 - All personnel must have access to dosage devices or measuring beakers to ensure correct dosage



- Chemical consumption over 640 µl/m² is not permitted
- The proportion of ecolabelled chemicals used must be higher than 50%
- No products used which require environmental hazard classification or are classified as highly toxic, toxic, harmful to health, allergenic, carcinogenic, mutagenic or toxic to reproduction
- No products containing reactive chloro- compounds, organochlorine compounds, EDTA, DTPA, NTA, LAS, APEOs, silver nanoparticles, PFAS, methyl dibromo glutaronitrile or optical brighteners
- Euronorm IV vehicles must make up a minimum of 95% of the total fleet of vehicles.
- Limits on the maximum consumption of fuel for transport purposes.
- For environmental and quality management:
 - A system for monitoring the quality of the cleaning service in an objective way (including a quality policy, procedures for management and control, procedures for preparing reports)
 - Adherence to environmental, safety and working environment regulations
 - A quality system with procedures to ensure compliance with ecolabelling criteria, documentation collection, contact point, performance of a cleaning quality control system
 - Annual reporting covering all the criteria of the ecolabel
 - Staff training plan – including an introduction to cleaning agents, methods, equipment and machines, information on waste management, an introduction to aspects of health, safety and the environment and training in eco-friendly driving for relevant personnel.
 - Written work instructions – including a description of the work, a specification of the agreed quality, frequency, cleaning object and methods to be used
 - Customer information – if requested, customers must be supplied with information on how to reduce the environmental impact of cleaning
 - Must be registered for VAT and employer's National Insurance contribution, have an agreement with a trade union for its staff, have accounts certified by an auditor and must not be in arrears on its taxes
 - All documentation regarding the ecolabel licence must be available on the licenceholder's premises.
 - Marketing must be conducted in accordance with the rules on ecolabelling.

Additional points offered for:

- Total consumption of chemicals per cleaned area
- The proportion of ecolabelled (Type I) products used
- The proportion of concentrated products used.
- Fuel efficiency for transport purposes
- The lowest quantity of bags used for refuse-bins and waste paper baskets over the year
- In-house sorting of waste
- Purchase of ecolabelled services

11.2.8 Other proposals

Government Buying Standards in the UK include the following criteria in relation to cleaning products (<http://sd.defra.gov.uk/documents/spec-cleaning-services.pdf>):

- The use of reusable microfibre cloths
- The use of dry cleaning methods for linoleum flooring (removing dust rather than mopping)

In addition, a Nordic Ecolabel is available for fabric cleaning products containing



microfibers.

These criteria could be proposed to the contractor, who can be required within the contract conditions to assess the practicality of such methods and report back after a certain time. This allows even more advanced solutions and on-going improvements after award of the contract.



Appendix 1 – Comparison of EU Ecolabel and Nordic Swan criteria for cleaning products

Areas of agreement

General area	Specific condition (EU Ecolabel criteria unless stated)	Notes
Toxicity to aquatic organisms.	Critical dilution volume toxicity CDV_{chronic} levels for different products.	Nordic Swan considers both CDV_{acute} and CDV_{chronic} ; Different values apply.
Product classification – corrosive (C).	Product must not be classified as corrosive (C with R34 or R35).	For EU Ecolabel this only applies for hand dishwashing detergents. For Nordic Swan all cleaning products with exceptions for professional products and WC-products for consumers if the classification is set because of pH). For Bra Miljöval products that are not dispensed automatically must not be classified as R35.
Surfactants – ready biodegradability.	Surfactants used must be readily biodegradable (slightly different wording used).	Also included in Bra Miljöval. For EU Ecolabel this is only specifically stated for all-purpose cleaners, sanitary cleaners, window cleaners and hand dishwashing detergents.
Surfactants – anaerobic biodegradability.	Surfactants used must be anaerobically biodegradable (slightly different wording used).	Also included in Bra Miljöval. For EU Ecolabel this is only specifically stated for all-purpose cleaners, sanitary cleaners, window cleaners and hand dishwashing detergents. In addition, exemptions up to specific limits are given for surfactants that are not anaerobically biodegradable provided that they are not classified as H400 or R50.
Aerobically not readily biodegradable organic substances (aNBO).	Should not exceed specified values (depending on the product).	For EU Ecolabel this only applies to laundry detergents and dishwasher detergents. Nordic Swan has slightly different limit values.
Anaerobically not readily biodegradable organic substances (anNBO)	Should not exceed specified values (depending on the product)	Bra Miljöval limits ingredients that are not fully biodegradable in accordance with the OECD 302 to a maximum of 2% by weight.
Carcinogenic ingredients (R40, 45, 49).	Ingredients above 0.01% of the weight of the final product must not be classified as carcinogenic.	For EU Ecolabel this only applies to laundry detergents and dishwasher detergents. Nordic Swan has slightly different limit values.
Mutagenic ingredients (R46, 68).	Ingredients above 0.01% of the weight of the final product must not be classified as mutagenic.	No concentration limit set for substances for Nordic Swan. Also included in or Bra Miljöval (no concentration limit).



General area	Specific condition (EU Ecolabel criteria unless stated)	Notes
Environmentally harmful environment (R50/53, R51/53 and R52/53).	Different formulations – EU Ecolabel: Ingredients above 0.01% of the weight of the final product must not be classified as R50/53 (very toxic and may cause long term adverse effects), R51/53 (Toxic and may cause long term adverse effects) or R52/53 (harmful and may cause long term adverse effects). Nordic Swan: Based on a maximum concentration in in-use solution for R50/53 ingredients and the sum of R51/53 and R52/53 ingredients.	EU Ecolabel also applies to R50 without R53 and to R53 alone. Bra Miljöval has similar requirements based on the actual toxicity to aquatic organisms, ready biodegradability and bioaccumulation potential but which vary by ingredient type (these are effectively equivalent to R50/53, R51/53 and R52/53 dependent upon the ingredient).
Sensitising ingredients (R42, 43).	Ingredients above 0.01% of the weight of the final product not be classified as sensitising.	For EU Ecolabel exemptions are given for enzymes (all products) and bleach catalysts (laundry detergents only). No concentration limit set for substances for Nordic Swan except for certain preservatives (0.1% weight). For Nordic Swan certain fragrances enzymes are exempted and the exemption for fragrances applies to individual concentrations of 0.01% by weight and below.
Ingredients which interfere with reproduction (R61, 62, 63, 64, 68).	Ingredients above 0.01% of the weight of the final product must not be classified as interfering with reproduction.	No concentration limit set for substances for Nordic Swan. Also included in Bra Miljöval (no concentration limit).
Phosphorus	Limits set on the quantity of phosphorus (phosphates or phosphonates) acceptable in the product – different accepted levels for EU Ecolabel and Nordic Swan. Nordic Swan products must not contain phosphonates (exception for solid soap products) and the limit for total phosphorus is 0.50g per litre in-use solution for pre-diluted products and 0.05g per litre in-use solution for concentrated products. EU Ecolabel: 0.02g per litre wash solution or 0.2g/100g product (all-purpose cleaners), 1.0g/100g (sanitary cleaning products). Window cleaners must not contain phosphorus. Laundry detergents and dishwasher detergents must not contain phosphates above 0.01% of the weight of the final product. Bra Miljöval: ingredients that contain phosphorus must not be added to the product intentionally.	For EU Ecolabel the requirements on total phosphorus only apply for all-purpose cleaners sanitary cleaners and window cleaners. Additionally phosphates are not allowed in laundry detergents and dishwasher detergents. No requirements for hand dishwashing detergents.
EDTA.	Product must not contain EDTA above 0.01% of the weight of the final product.	No concentration limit set for this substance for Nordic Swan. Bra Miljöval does not list specific substances but requires that complexing agents must be readily biodegradable and must not be very toxic to aquatic organisms (R50).
DTPA.	Product must not contain DTPA above 0.01% of the weight of the final product.	For EU Ecolabel this only applies for dishwasher detergents. No concentration limit set for this substance for Nordic Swan. Bra Miljöval does not list specific substances but requires that complexing agents must be readily biodegradable and must not be very toxic to aquatic organisms (R50).



General area	Specific condition (EU Ecolabel criteria unless stated)	Notes
APEOs and APEO derivatives.	Product must not contain APEOs above 0.01% of the weight of the final product.	No concentration limit set for substances for Nordic Swan. For EU Ecolabel this only applies to all-purpose cleaners, sanitary cleaners, window cleaners and hand dishwashing detergents.
NTA.	Product must not contain NTA at concentrations above 0.01% of the weight of the final. Complexing agents such as MGDA and GLDA may contain NTA as an impurity in concentrations below 1.0% as long as the concentration in the cleaning product is below 0.1%.	No concentration limit set for substances in products in Nordic Swan. However the same exemption as for impurities in MGDA and GLDA applies. Bra Miljöval does not list specific substances but requires that complexing agents must be readily biodegradable and must not be very toxic to aquatic organisms (R50).
Quaternary ammonium compounds that are not readily biodegradable.	Product must not contain above 0.01% of the weight of the final product.	No concentration limit set for substances for Nordic Swan. The Nordic Swan for professional dishwasher detergents and professional laundry detergents specifically prohibits diallyl dimethyl ammonium chloride (DADMAC). For EU Ecolabel this only applies for all-purpose cleaners, sanitary cleaners and window cleaners.
Reactive chlorine compounds.	For the EU Ecolabel, the product must not contain above 0.01% of the weight of the final product. Nordic Swan restricts reactive chloro compounds such as sodium hypo chlorite, chloro-organic compounds (such as triclosan and kathon) and benzalkonium chloride.	For the EU Ecolabel this only applies for dishwasher detergents. No concentration limit set for substances for Nordic Swan.
Preservatives (biocides).	Biocides may only be used as preservatives.	Similar requirement for Bra Miljöval.
Preservatives (biocides).	The product must not contain preservatives/biocides that are regarded as bioaccumulative above 0.01% of the weight of the final product.	For the EU Ecolabel this only applies to biocides classified as R50/53 or R51/53 (all-purpose cleaners, sanitary cleaners, window cleaners and hand dishwashing detergents) or R50/53, R51/53 or R52/53 (laundry detergents and dishwasher detergents). No concentration limit set for substances for Nordic Swan cleaning products. The Nordic Swan for professional dishwasher detergents and professional laundry detergents uses a slightly different definition of bioaccumulative. Similar requirement for Bra Miljöval (additionally preservatives must be readily biodegradable and must not be very toxic to aquatic organisms (R50)).
Fragrances – IFRA norms.	All fragrances used in the product must be produced and used in accordance with the "Code of Practice" compiled by the International Fragrance Association (IFRA).	Similar requirement for Bra Miljöval.
Fragrances - nitromusk compounds.	Product must not contain nitromusks and polycyclic musks above 0.01% of the weight of the final product.	No concentration limit set for substances for Nordic Swan.



General area	Specific condition (EU Ecolabel criteria unless stated)	Notes
Packaging markings.	Plastics parts in the primary packaging must be marked in accordance with DIN 6120, Part 2 or equivalent. Caps and pumps are exempted from this requirement.	EU Ecolabel requirements for all-purpose cleaners, sanitary cleaners, window cleaners and hand dishwashing detergents relate to DIN 6120 Parts 1 and 2 in relation to the main container. Similar requirement for Bra Miljöval.
Primary packaging weight utility ratio.	The weight utility ratio (WUR) of the primary packaging must not exceed specific limits.	Limits depend on the package type. The thresholds are similar in both the EU Ecolabel and Nordic Swan.

Other issues covered by EU Ecolabel only

General area	Specific condition	Notes
Total chemicals. Points.	Total chemicals shall not exceed specified limits for dishwasher detergents. A minimum of 3 points must be achieved based on a calculation scheme which takes into account climate profile, maximum dosage, toxicity to aquatic organisms, aNBO and anNBO.	For EU Ecolabel this only applies to dishwasher detergents. For EU Ecolabel this only applies to laundry detergents.
5-Bromo-5-nitro-1,3-dioxane, 2-bromo-2-nitropropane-1,3-diol, diazolinidylurea, formaldehyde and sodium hydroxy methyl glycinate.	Product must not contain the substances at a concentration above 0.01% by weight of the final product.	For EU Ecolabel this only applies to all-purpose cleaners, sanitary cleaners, window cleaners and hand dishwashing detergents.
Perborates.	Product must not contain the substances at a concentration above 0.01% by weight of the final product.	For EU Ecolabel this only applies to all-purpose cleaners, sanitary cleaners, window cleaners and hand dishwashing detergents. Borates and perborates are prohibited from professional dishwasher detergents under the Nordic Swan. The Nordic Swan for professional laundry detergents prohibits boric acid and borates.
Substances referred to in Article 57 of Regulation (EC) No 1907/2006.	Product must not contain the substances at a concentration above 0.01% by weight of the final product.	The Nordic Swan for professional dishwasher detergents and professional laundry detergents prohibits substances that have been evaluated in the EU to be PBT or vPvB.
Ingredients which, on contact with water or acids liberates toxic gas (R29, R31, R32).	Product must not contain the substances at a concentration above 0.01% by weight of the final product.	
Ingredients which are toxic, very toxic or cause irreversible effects (R23, R24, R25, R26, R27, R28, R65, R39/23, R39/24, R39/25, R39/26, R39/27, R39/28, R48/20, R48/21, R48/22, R48/23, R48/24, R48/25, R68/20, R68/21, R68/22).	Product must not contain the substances at a concentration above 0.01% by weight of the final product.	



General area	Specific condition	Notes
Ingredients which are toxic by eye contact (R39-41).	Product must not contain the substances at a concentration above 0.01% by weight of the final product.	
Ingredients dangerous for the ozone layer (R59).	Product must not contain the substances at a concentration above 0.01% by weight of the final product.	
Phthalates in plastic packaging.	Only phthalates that have been risk assessed and have not been classified according to certain R-phrases may be used in the plastic packaging.	
Volatile organic compounds (VOCs).	Product shall not contain more than the specified limit of VOCs with a boiling point of less than 150°C.	For EU Ecolabel this only applies to all-purpose cleaners, sanitary cleaners and window cleaners. The specific limit is dependent on product type.
Fragrances.	Products for professional use must not contain fragrances.	For the EU Ecolabel this only applies to hand dishwashing detergents. A similar requirement is given in the Nordic Swan for dishwasher detergents and laundry detergents for professional use. For Bra Miljöval fragrances are not permitted in dishwasher detergents and stain remover. A maximum of 0.5% by weight fragrance content is permitted in washing-up liquid, laundry detergent, all-purpose cleaners, toilet cleaner and heavy-duty detergent.
Propellants.	Sprays containing propellants must not be used.	For the EU Ecolabel this only applies to all-purpose cleaners, sanitary cleaners and window cleaners.
Trigger sprays.	Products packaged in trigger sprays must be sold as part of a refillable system.	For the EU Ecolabel this only applies to all-purpose cleaners, sanitary cleaners and window cleaners.
Packaging labelling.	If the primary packaging is made of recycled material, any indication of this on the packaging must be in conformity with the ISO 14021 standard.	For the EU Ecolabel this only applies to all-purpose cleaners, sanitary cleaners and window cleaners.
Primary packaging.	The primary packaging should not exceed 2.0g per wash.	For the EU Ecolabel this only applies to dishwasher detergents.
Recycled cardboard	Cardboard primary packaging shall consist of ≥80% recycled material.	For the EU Ecolabel this only applies to dishwasher detergents. A similar requirement included in Bra Miljöval.
Dosage requirements.	The dosage shall not exceed specified amounts.	For the EU Ecolabel this only applies to laundry detergents. The specified dosage varies with product type.

Issues covered by other labels but not the EU Ecolabel

General area	Specific condition	Which labels?
Product classification.	Product must not be classified as environmentally harmful (N with R50, R50/53 or R51/53. R52, R53 or R52/53 without N), very toxic (Tx or T+), toxic (T), harmful to health (Xn; with certain exceptions), locally	Nordic Swan for cleaning products (a reduced list without the explosive or flammable substances is given in the Nordic Swan for professional dishwasher detergents). Bra Miljöval has a similar requirement related to



General area	Specific condition	Which labels?
	irritant (Xi; with certain exceptions), allergenic (Xn with R42 or Xi with R43), carcinogenic (R40, R45 and/or R49), mutagenic (R46 and/or R68), reprotoxic (R60, R61, R62, R63, R64 and/or R68), explosive (E), extremely flammable (Fx or F+), highly flammable F or fire hazard.	classification of the product as toxic and very toxic, allergenic and danger of cumulative effects/serious damage to health by prolonged exposure.
Surfactants.	If palm oil is used as a raw material in surfactant production the surfactant manufacturer or palm oil supplier must be a member of the Roundtable on Sustainable Palm Oil (RSPO) or be able to show that the palm oil comes from a plantation that is certified in accordance with RSPO's sustainable cultivation rules.	Bra Miljöval.
Enzymes.	Must not be present in aerosol products. In other products enzymes must be in liquid form or in form of granulate that does not release dust.	Nordic Swan. Bra Miljöval has limits for biological substances of 0.1% by weight. For biological substances classified as R43 this is reduced to 0.010% for products that wash off after use and 0.0010% for products that do not wash off. The concentrations must be combined with any contribution from fragrances.
Linear alkyl benzene sulphonates.	Must not be present in the product or its raw materials.	Nordic Swan.
Triclosan.	Must not be present in the product.	Nordic Swan for professional laundry detergents.
Silver nanoparticles.	Must not be present in the product or its raw materials.	Nordic Swan for cleaning products. The Nordic Swan for professional dishwasher detergents and professional laundry detergents prohibits nanomaterials/particles based on metal, carbon and/or fluorine compounds.
Methyldibromo glutaronitrile.	Must not be present in the product in any quantity.	Nordic Swan for cleaning products.
Perfluorinated substances and polyperfluorinated alkylated substances (PFAS).	Product must not be present in the product in any quantity.	Nordic Swan for cleaning products and professional laundry detergents.
Optical brightener.	Must not be present in the product in any quantity.	Nordic Swan for professional laundry detergents.
Substances on EU's list of substances considered to be endocrine disruptors or have potential for endocrine disruption.	Must not be present in the product or its raw materials.	Nordic Swan
Phthalates, organically bound halogens, cadmium, lead, mercury and chrome.	Must not be present in the product.	Bra Miljöval.



General area	Specific condition	Which labels?
Halogenated flame retardants. Nitrogen. Dyes. Stabiliser. Packaging.	Must not be present in the product. The nitrogen content of the product must not exceed 1.0% by weight. For the Nordic Swan : must be approved for use in foodstuffs or is not bioaccumulative. For Bra Miljöval : Colouring agents must be approved as food colouring in accordance with the Swedish National Food administration code (SLVFS) 1999:22, or be readily biodegradable according to OECD 301 and meet requirements 15.5-15.7 under the heading Other additives. Also not classified as R43. Colouring agents are not permitted in laundry detergent, stain remover and dishwasher detergent. Ingredients that can be broken down into substances that are classified as R40 may not be used as stabilisers for enzymes in concentrations higher than 0.012% by weight. Packaging (including labels) containing PVC or plastic based on other types of chlorinated materials must not be used.	Nordic Swan for professional laundry detergents. Bra Miljöval. Nordic Swan and Bra Miljöval. Bra Miljöval. Nordic Swan. For Bra Miljöval plastic packaging must be made from polyethylene, polypropylene, polyethylene terephthalate or an equivalent plastic. PVC is not permitted.
Packaging.	Packaging must be made of components that are easy to take apart, and each component must consist of a single type of material (exemption for refill packaging that weighs no more than 30% of the weight of the original packaging).	Bra Miljöval.