



## Content

### Day 1: Tuesday, 20th January 2015

1.	Introduction Summary of market and technical analysis
2.	Detergent product groups scope and definitions Coffee break
3.	Measurement threshold / Reference dosage/ dosage requirements Lunch break
4.	Toxicity to aquatic organisms criteria Coffee break
5.	<b>Biodegradability criteria</b>

## Biodegradability




### Biodegradability of surfactants


The Detergents Regulation covers:

- **'Primary biodegradation'**, i.e. the structural change (transformation) of a surfactant by micro-organisms resulting in the loss of its surface-active properties due to the degradation of the parent substance and consequential loss of the surface-active property as measured by test methods listed in Annex II.
- **'Ultimate aerobic biodegradation'**, i.e. the level of biodegradation achieved when the surfactant is totally used by micro-organisms in the presence of oxygen resulting in its breakdown to carbon dioxide, water and mineral salts of any other elements present (mineralisation), as measured by test methods listed in Annex III, and new microbial cellular constituents (biomass).

The issues relating to **anaerobic biodegradation** and the **biodegradation of the main non-surfactant organic detergent ingredients** are not covered under the Detergents Regulation, but addressed in many ecolabelling schemes.

<div>  <div>Biodegradability</div> </div>				
Comparison of biodegradability requirements in EU Ecolabels				
	Surfactants must be aNBO	Surfactants must be anNBO	Limits on aNBO of organics	Limits on anNBO of organics
LD			X separately for liquid and powder	X separately for liquid and powder
DD			X	X
IIDD	X	X	X separately for soft, medium and hard water	X separately for soft, medium and hard water
HDD	X	Surfactants that are not biodegradable under anaerobic conditions may be used in the product provided that the surfactants are not classified with H400/R50 (Very toxic to aquatic life) within the limit specified.		
APC	X	Surfactants not biodegradable under anaerobic conditions may be used in the product within specified limitations provided that they are not classified with H400/R50 (Very toxic to aquatic life)		

3

<div>  <div>Biodegradability</div> </div>		
Consumer laundry detergents		
<b>Current criterion 3</b>		
The content of organic substances in the product that are aerobically non-biodegradable (not readily biodegradable aNBO) or anaerobically non-biodegradable (anNBO) shall not exceed the following limits:		
<b>aNBO:</b>		
<b>Product type</b>	<b>aNBO, powder</b>	<b>aNBO, liquid</b>
Heavy-duty laundry detergent, colour-safe detergent	1.0 g/kg wash	0.55 g/kg wash
Low-duty detergent	0.55 g/kg wash	0.30 g/kg wash
Stain remover (pre-treatment only) (*)	0.10 g/kg wash	0.10 g/kg wash
(*) aNBO limit based on an estimated dosage of 2 ml per application and 6 applications per wash-load of 4.5 kg for a liquid stain remover.		
<b>For anaerobically non-biodegradable organics (anNBO):</b>		
<b>Product type</b>	<b>anNBO, powder</b>	<b>anNBO, liquid</b>
Heavy-duty laundry detergent, colour-safe detergent	1.3 g/kg wash	0.70 g/kg wash
Low-duty detergent	0.55 g/kg wash	0.30 g/kg wash
Stain remover (pre-treatment only) (*)	0.10 g/kg wash	0.10 g/kg wash
(*) anNBO limit based on an estimated dosage of 2 ml per application and 6 applications per wash-load of 4.5 kg for a liquid stain remover.		
<b>Assessment and verification:</b> Calculation of aNBO and anNBO for the product. A spreadsheet for use in calculating aNBO and anNBO values is available on the EU Ecolabel website.		
Refer to the DID List. For ingredients which are not included in the DID List, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided. See Appendix I.		
Note that TAED should be considered anaerobically biodegradable		



## I&I laundry detergents

### Current criterion 3

#### a) Biodegradability of surfactants

All surfactants must be biodegradable under aerobic conditions

All non-ionic and cationic surfactants must also be biodegradable under anaerobic conditions

#### b) Biodegradability of organic substances

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

##### aNBO

Soft water (0-6 °dH)	aNBO (g/kg laundry)		
Product type/Degree of soiling	Light	Medium	Heavy
Powder	0.70	1.10	1.40
Liquid	0.50	0.60	0.70
Multi-component system	1.25	1.75	2.50

Medium water (7-13 °dH)	aNBO (g/kg laundry)		
Product type/Degree of soiling	Light	Medium	Heavy
Powder	1.10	1.40	1.75
Liquid	0.60	0.70	0.90
Multi-component system	1.75	2.50	3.75

Hard water (>14 °dH)	aNBO (g/kg laundry)		
Product type/Degree of soiling	Light	Medium	Heavy
Powder	1.40	1.75	2.20
Liquid	0.70	0.90	1.20
Multi-component system	2.50	3.75	4.80



## I&I laundry detergents

##### anNBO

Soft water (0-6 °dH)	anNBO (g/kg laundry)		
Product type/Degree of soiling	Light	Medium	Heavy
Powder	0.70	1.10	1.40
Liquid	0.50	0.60	0.70
Multi-component system	1.25	1.75	2.50

Medium water (7-13 °dH)	anNBO (g/kg laundry)		
Product type/Degree of soiling	Light	Medium	Heavy
Powder	1.10	1.40	1.75
Liquid	0.60	0.70	0.90
Multi-component system	1.75	2.50	3.75

Hard water (>14 °dH)	anNBO (g/kg laundry)		
Product type/Degree of soiling	Light	Medium	Heavy
Powder	1.40	1.75	2.20
Liquid	0.70	0.90	1.20
Multi-component system	2.50	3.75	4.80



## Consumer dishwasher detergents

### Current criterion 4

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

Product type	aNBO	anNBO
Dishwasher detergents	1.0 g/wash	5.50 g/wash
Rinse aid	0.15 g/wash	0.50 g/wash

**Assessment and verification:** Calculation of aNBO and anNBO for the product. A spreadsheet for use in calculating aNBO and anNBO values is available at the EU Ecolabel website.

Refer to the DID list. For ingredients which are not included in the DID list, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided. See Appendix I.

Note that TAED should be considered anaerobically biodegradable.



## I&I dishwasher detergents

### Current criterion 2

#### a) Biodegradability of surfactants:

All surfactants must be biodegradable under aerobic and anaerobic conditions

#### b) Biodegradability of organic substances:

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

#### aNBO

Product type (g/l washing solution)	Soft 0-6 °dH	Medium 7-13 °dH	Hard > 14 °dH
Pre-soaks	0.4	0.4	0.4
Dishwasher detergents/ Multi-component system	0.4	0.4	0.4
Rinse aids	0.04	0.04	0.04

#### anNBO

Product type (g/l washing solution)	Soft 0-6 °dH	Medium 7-13 °dH	Hard > 14 °dH
Pre-soaks	0.4	0.4	0.4
Dishwasher detergents/ Multi-component system	0.6	1.0	1.5
Rinse aids	0.04	0.04	0.04

Note that TAED should be considered anaerobically biodegradable.



Biodegradability

## Hand dishwashing detergents

Current criterion 2

**(a) Ready biodegradability (aerobic)**


Each surfactant used in the product shall be readily biodegradable.

**b) Anaerobic biodegradability**

Surfactants that are not biodegradable under anaerobic conditions may be used in the product provided that the surfactants are not classified with H400/R50 (Very toxic to aquatic life) within the limit specified below.

The total weight of such anaerobically non-biodegradable surfactants must not exceed 0.10 gram of the recommended dose expressed for 1 litre of dishwashing water.

9



Biodegradability

## Cleaning products

Current criterion 2

a) **Ready biodegradability (aerobic)**

Each surfactant used in the product shall be readily biodegradable.

**b) Anaerobic biodegradability**

Surfactants that are not biodegradable under anaerobic conditions may be used in the product within specified limitations provided that the surfactants are not classified with H400/R50 (Very toxic to aquatic life) within the limit specified below.


For all-purpose cleaners to be diluted with water prior to use, the total weight of anaerobically non-biodegradable surfactants must not exceed 0.40 g of the recommended dose expressed for 1 litre of washing water.

For all-purpose cleaners to be used without dilution, the total weight of anaerobically non-biodegradable surfactants must not exceed 4.0 g per 100 g product.

For sanitary cleaners, the total weight of anaerobically non-biodegradable surfactants must not exceed 2.0 g per 100 g product.

For window cleaners, the total weight of anaerobically non-biodegradable surfactants must not exceed 2.0 g per 100 g product.

10


**Biodegradability**

## Common approach

To be discussed at the 1st AHWG meeting

a) Biodegradability of surfactants

All surfactants shall be biodegradable under aerobic conditions.

All (non-ionic and cationic) surfactants shall be biodegradable under anaerobic conditions.


  

b) Biodegradability of organic substances and mixtures

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

Product type	aNBO	anNBO
Type of product	x,xx g	x,xx g

11


**Biodegradability**

## Common approach

To be discussed at the 1st AHWG meeting

**Assessment and verification:** The applicant shall provide documentation for the degradability of surfactants, as well as the calculations of aNBO and anNBO for the product. A spreadsheet for use in calculating aNBO and anNBO values is available on the EU Ecolabel website.

For both surfactants and aNBO and anNBO values, reference shall be made to the DID List. For ingredients which are not included in the DID List, the relevant information from literature or other sources, or appropriate test results, showing that they are aerobically and anaerobically biodegradable shall be provided as described in Appendix I.

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

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

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

12



## Biodegradability

### Consultation question

- Can the approach voted most recently for the product groups of industrial and institution products be adopted for all product groups?
- ❖ Need for stakeholders involvement into proposing new thresholds, once the common approach is agreed.
- ❖ Changes to the currently existing thresholds will be analysed and proposed following the agreement on the common approach

13



# Thank you

14