

# **Revision of the harmonised Detergent Ingredient Database**

**Final report for DID 2016.**

**May 2017**

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## Introduction

The updating of Detergent Ingredient Database ("DID-list") is a collaboration between EU Ecolabel and Nordic Ecolabelling together. The technical part of this update has been carried out by Nordic Ecolabelling.

The project has been implemented in three phases,

- Collection of input and data,
- Updating and adding of new data
- Evaluation of new data.

This project "Update of the DID-list" started in January 2016 and finished in May 2017.

## **1 Background**

### **1.1 The purpose of the DID-list**

The DID-list has been developed to facilitate the ecolabel application process and to guide producers of detergents and cosmetics towards substances of less environmental impacts. The list is not intended for regulatory purposes. For more information, see 2014 DID-list report<sup>1</sup>.

### **1.2 Framework, updating and extension of the list**

The Harmonised DID-list for the EU Ecolabel Scheme and the Nordic Ecolabel Scheme was extensively discussed when it was established in 2004. The framework of the list, like the headlines, the safety factor and the calculation method was then discussed in detail, and agreed among the stakeholders and member states. In 2007 a minor revision was carried out. The list of 2007 has proved to be a suitable tool for the ecolabel schemes and the applicants and contains 204 ingredients. In 2014 a bigger revision was carried out. The DID-list was extended to include 242 numbers. The extension was mainly due to the surfactants being divided in a different way than in the DID-list 2007. The group of surfactants of about 60 has been divided into approximately 100 DID-numbers in close dialogue with the industry.

In consequence of the REACH legislation there are new data and knowledge that may not always be consistent with the content of the DID-list of 2014. In the 2014 DID-list revision it was decided that smaller updates can and should be done to the list continuously. This is the first of such updates.

For more information on the historical background of the DID-list and the framework of the DID-list, see 2014 DID-list report.<sup>1</sup>

The changes in the DID-list will result in changes in the CDV-values for some products. The project group recommends that the Nordic Ecolabelling and the EU Ecolabelling evaluates how they should implement the DID-list of 2016 in the current criteria documents.

## **2 Collection and evaluation of data**

### **2.1 Information about the project group**

Nordic Ecolabelling has agreed with the European Commission to carry out the technical work on revising the list. A Nordic Ecolabelling project group has been set up consisting of Susanna Vesterlund from Sweden, Terhi Uusitalo from Finland, Thor Hirsch from Norway, Mie Ostenfeldt from Denmark, Marianne B Eskeland from Norway and Lina Harström from Sweden.

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<sup>1</sup> DID-list Final Report 2014. [http://www.svanemarket.no/PageFiles/5783/DID-list\\_Final\\_Report\\_2013\\_adjusted\\_April\\_2014.pdf](http://www.svanemarket.no/PageFiles/5783/DID-list_Final_Report_2013_adjusted_April_2014.pdf)

Ecotoxicologist Torben Madsen from DHI acted as external consultant for the project group. The consultant provided expert advice to the project group on specific questions raised by the group. Furthermore, the consultant reviewed all changes that the project group proposed to the DID-list, and gave his input regarding the proposed changes. Torben Madsen was also engaged in the revisions in 2004, 2007 and 2014.

## **2.2 Collection of data**

The goal of this minor revision was to correct errors and adjust anything in the DID-list that might be unclear and cause problems while handling Ecolabel applications. The project group also had the mandate to add a limited number of new entries. Ecolabel applications are assessed by Competent Bodies in EU and the Nordic Ecolabelling. Hence, input was first and foremost collected from the Competent Bodies. Based on their input, information and data was collected from relevant stakeholders and from ECHA's website.

The project group was also in dialogue with stakeholders that had submitted input after the update in 2014, in order to evaluate this information for the 2016 revision.

As detergents constitute a major part of the DID-list, the project group had close dialogue with CESIO (European Committee of Organic Surfactants and their Intermediates). CESIO contributed in particular with updated data on surfactants. These data were discussed in detail during two telephone meetings and by email. Furthermore, CESIO also provided advice on i.e. naming the surfactants on the DID-list.

All submitted data has been handled under strict confidentiality and has only been used in this DID-list revision project. The data behind the DID-list version 2004, 2007, 2014 and 2016 is kept in a confidential Nordic Ecolabel database that only the project group has access to, and is only used for the DID-list.

A questionnaire was sent out to all competent bodies as well as to Cesio in February 2016. The questions asked are presented in appendix 1. A summary of the inputs is presented in appendix 2.

## **2.3 Quality guidelines for acceptance of test results for the DID-list**

The same guidelines for acceptance of test results were applied as for the DID-list revision in 2014 (see chapter 7.4 in 2014 DID-list report).

## **2.4 Evaluation of data**

The data has been evaluated by the Nordic Ecolabel project group. The changes that have been implemented, as well as other specific questions and ambiguities have been discussed with the external consultant, ecotoxicologist Torben Madsen, DHI.

### 3 Results

The revision of the DID-list aimed to ease the handling for applicants as well as for assessors. An overview of all the changes made to the DID-list part A is given in table 1 in chapter 3.5 Summary of the changes.

#### **3.1 New and removed ingredients**

The DID-list has been extended by five new entries (DID-numbers 2616-2620), based on specific input from competent bodies. Four of the new ingredients (DID-numbers 2617-2620) are widely used in cosmetic products. Three more ingredients that are widely used in cosmetic products (sorbitol, xylitol and cetearyl alcohol) were also added to the DID-list. However, no new entries were needed for these three, as they could be placed under the existing DID-numbers 2503 and 2530. Two entries, both preservatives (DID-numbers 2409 and 2417), have been removed. They are neither allowed as PT6 preservatives in the EU (Regulation (EU) 528/2012) nor allowed as preservatives in cosmetics in EU (Regulation (EC) No 1223/2009) anymore.

DID-numbers 2104, 2105 and 2106 in the DID-list version 2014.1 have been removed. They are covered by DID-numbers 2156, 2157, 2159 and 2160. The new DID-numbers 2158, 2159 and 2160 are branched counterparts of the predominately linear DID-numbers 2155, 2156 and 2157 (DID-numbers 2101, 2102 and 2103 in the DID-list 2014.1).

#### **3.2 New data on ingredients that were already on the DID-list**

The acute toxicity values for DID-numbers 2101, 2102 and 2103 (DID-numbers 2155, 2156 and 2157 in the DID-list 2016) have been adjusted. The values have been derived from the available data for the three substances, and by taking into account that the ecotoxicity is generally decreasing with increasing degree of ethoxylation in the molecules. At the same time, the chronic toxicity data for 2101 has been slightly adjusted, in order to reflect that the values for 2101-2103 are approximate rather than based on exact test results. Moreover, the toxicity data for DID-number 2108 has been harmonized with DID-number 2105 (DID-number 2159 in the DID-list 2016), due to structural similarities of the two ingredients.

Chronic data has been obtained for two entries that previously were based only on acute data (DID-numbers 2023 and 2133). The safety factor for chronic toxicity has been reduced for six entries because data for more trophic levels was obtained (DID-numbers 2115, 2143, 2144, 2147, 2404 and 2555).

The aerobic degradation has been changed for three ingredients (DID-numbers 2120 (2168 in DID 2016), 2129 (2178 in DID2016) and 2404), based on test data.

### **3.3 Harmonization of toxicity factors for inorganic ingredients with little risk for adverse aquatic toxicity effects**

Toxicity factors for six inorganic ingredients in the DID-list section «other ingredients» have been harmonized (DID-numbers 2515, 2516, 2534, 2535, 2537, 2542). These ingredients are considered to pose little risk for adverse aquatic toxicity effects in the environment. They have been identified on a case by case basis, based on:

- low intrinsic toxicity (with guidance values LC/EC50 > 1000 mg/l and NOEC > 100 mg/l)

and/or

- negligible effects in the environment due to rapid transformation

and/or

- poor water solubility (i.e. low bioavailability). Solubility should be considered together with the expected intrinsic toxicity. I.e. poor water solubility alone is not sufficient to make an ingredient eligible for the harmonized toxicity factor.

Test results for chemicals with poor water solubility or with low intrinsic toxicity are in many cases associated with significant uncertainty. Test results for chemicals that are rapidly transformed in the recipient aquatic environment may, similarly, suggest «false effects», i.e. the adverse effects expressed under test conditions will not be expressed in the environment. Hence, harmonization of the toxicity factors is considered to be reasonable. The harmonized value for both TFacute and TFchronic has been set to 10, in order to reflect the low risk for adverse effects.

### **3.4 Other adjustments to the DID-list**

The intervals of the functional ethoxylate groups have been adjusted for five non-ionic surfactants (DID-numbers 2107, 2144, and 2149 as well as 2128 and 2145 that have now received new DID numbers 2177 and 2179), in order to align with the intervals that are applied by Cesio.

Moreover, the ingredient names have been clarified and/or adjusted for 32 entries, and some typing errors have been corrected. 22 of these entries were assigned new DID-numbers, either because. These are non-ionic surfactants where the naming has been clarified by adding "predominately linear", or substances which cover a narrower range in the DID 2016-list than they did in the DID 2014.1 New DID-numbers were assigned in order to avoid misunderstandings while referring to DID 2014.1 and 2016 respectively. For 31 of the entries (all of them non-ionic surfactants), only minor clarifications were made. For DID-number 2501 the change was more substantial. Silicone ("silicon" (sic) in the DID-list 2014.1) has been limited to linear polydimethylsiloxanes. Accordingly, the toxicity factor has been updated based on data for linear polydimethylsiloxanes. Due to low water solubility, testing of aquatic toxicity for linear polydimethylsiloxanes is challenging. A conservative approach has been taken for the evaluation of the toxicity data, and TFchronic has been set equal to TFacute. Due to

these changes, DID-number 2501 has been removed and linear polydimethylsiloxane has been assigned DID-number 2621.

Finally, the accepted methods for evaluation of anaerobic and aerobic biodegradability have been added to the DID-list part B.

### 3.5 Summary of the changes

All changes described above are summarized in table 1.

Table 1. Changes made from DID-list 2014.1 to DID-list 2016.

<b>DID-number in version 2014.1</b>	<b>DID-number in version 2016</b>	<b>Change</b>
2018, 2019, 2020		Clarification of the ingredient names
2023		Chronic data has been added, resulting in an increase in TFchronic from 0,00033 to 0,024
2025		A cross reference to fatty acids (DID number 2520) has been added to the substance name.
2101, 2102, 2103	2155, 2156, 2157	Clarification of the ingredient names (i.e. "predominately linear" added to the names). A harmonised approach has been taken to the acute and chronic toxicity values for these three ingredients, resulting in: <ul style="list-style-type: none"> <li>- DID 2101: a decrease in TFacute from 0,0078 to 0,005 and a decrease in TFchronic from 0,186 to 0,15.</li> <li>- DID 2102: an increase in TFacute from 0,001 to 0,005.</li> <li>- DID 2103: a decrease in TFacute from 2,5 (which was based on chronic data) to 0,05.</li> </ul>
2104, 2105, 2106	2155, 2156, 2159, 2160	DID 2104 and 2105 have been deleted, as they were already covered by 2102 and 2103 (2155 and 2156 in DID-list 2016). The previous 2106 is covered by the new 2159 and 2160.
2107		Clarification of the ingredient name, and the EO-group has been expanded from 8EO to > 2.5 - ≤ 10 EO.
2108		The toxicity values have been harmonized with the new DID

		2105, resulting in a decrease in TFacute from 0,01 to 0,005 and an increase in TFchronic from 0,01 to 0,15.
2109, 2110, 2111, 2116- 2127	2161, 2162, 2163, 2164 - 2176	Clarification of the ingredient names (i.e. "predominately linear" added to the names).
	2115	New chronic data has been added, resulting in an increase in TFchronic from 0,0316 to 0,25.
2120	2168	Aerobic degradation has been changed from I to R based on test data.
2128	2177	Clarification of the ingredient name (i.e. "predominately linear" added to the name), and the EO-group has been adjusted to include 20 EO.
2129	2178	Clarification of the ingredient name (i.e. "predominately linear" added to the name), and aerobic degradation has been changed from I to R based on test data.
	2133	Chronic data has been added, resulting in an increase in TFchronic from 0,01 to 0,125.
	2143	New chronic data has been added, resulting in an increase in TFchronic from 0,0000107 to 0,000214.
	2144	The EO-group has been adjusted. As a result, the TFacute has increased from 0,000063 to 0,000084. New chronic data has been added, resulting in an increase in TFchronic from 0,0000107 to 0,000214.
2145	2179	The EO-group has been adjusted. As a result, the TFacute (and TFchronic) has increased from 0,00044 to 0,0013.
	2147	Clarification of the ingredient name. New chronic data has been added, resulting in an increase in TFchronic from 0,0000107 to 0,000088.
	2148	Clarification of the ingredient name.
	2149	Clarification of the ingredient name. EO group has been extended from 20 EO to $\geq 20 - \leq 25$

		EO.
2150		Aerobic degradation changed from R to I, in order to be in line with our reference data and with the DF factor of 0,5.
	2158, 2159, 2160	New entries. These are branched counterparts of the predominately linear DID-numbers 2155, 2156 and 2157 (which had the DID-numbers 2101, 2102 and 2103 in the DID-list 2014.1). Please note that 2159-2160 also covers 2106 from the DID-list 2014.1.
2404		A remark ("formaldehyde donor") has been added to the substance name. New chronic data has been added, resulting in an increase in TFchronic from 0,002 to 0,01. Aerobic degradation changed from DF=0,5 degradation = 1 to DF=0,15 degradation = R.
2409 and 2417		These substances have been removed from the list, as they are neither allowed as PT6 preservatives in the EU (Regulation (EU) 528/2012) nor allowed as preservatives in cosmetics in EU (Regulation (EC) No 1223/2009).
2421		SFChronic has been corrected from 20 to 50 as we have chronic data for two trophic levels. Hence TFchronic has decreased from 0,000425 to 0,00017.
2501	2621	Entry clarified and changed from silicon (sic) to linear polydimethylsiloxanes. The TFacute (and TFchronic) were changed from 0,25 to 0,1 based on data for linear polydimethylsiloxanes (CAS 63148-62-9).
2515, 2516, 2534, 2535, 2537, 2542		These entries all have the common feature of being "inorganic ingredients with little risk for adverse aquatic toxicity effects" (see chapter 3.3). The acute and chronic toxicity values for these entries have been harmonized.
2503		Sorbitol and xylitol have been

		added to this entry.
2520		A cross reference to soap (DID number 2025) has been added to the substance name.
2530		Cetearyl alcohol has been added to this entry.
2544		Clarification of the ingredient name.
2555		New chronic data has been added, resulting in an increase in TFchronic from 0,17 to 0,234.
2589		DF corrected to 0,05.
	2616, 2617, 2618, 2619, 2620	New entries.

#### 4 Updates and future revisions

The project group received questions about updating of the DID-list that weren't incorporated in this minor update because more resources would have been needed. In addition, it is a general opinion that the development in the field at the moment is rapid. Even the updated DID-list may rapidly become outdated if no update activities are conducted.

It is therefore still recommended that the EU Ecolabel together with the Nordic Ecolabel continues to update the DID-list continuously.

## **Appendix 1**

### **Collection of input on the DID-list of 2014**

Following email was sent to all competent bodies and Cesio

#### **Update of the DID-list**

##### **Dear Sir or Madame**

Nordic Ecolabelling is currently starting up a project to update the DID-list. This will be a small update to update existing data and, if possible, add a few new substances. No major revision will take place now.

We therefore want to collect experience from the use of the DID list (2014) from the competent bodies, their applicants and CESIO. We would like you to summarize the updates that have been done to your list. The collected data will be used for updating the DID-list and to avoid misunderstandings.

If new eco-toxicological data on substances is sent to Nordic Ecolabelling, this data will be evaluated as described in chapter 7 of the background report for the DID-list 2014. The framework for suggested new data will be in accordance with chapter 4 of the background report for DID list 2014. A Nordic Ecolabelling project group has been set up consisting of Susanna Vesterlund from Sweden, Terhi Uusitalo from Finland, Marianne B Eskeland from Norway and Lina Harström from Sweden. The project group will together with the Danish consultants from DHI assess the proposals and the data sent in. An analysis of the consequences for the existing criteria documents using the DID list (2014), in both Nordic Ecolabelling and EU Ecolabel is included in the work. This analysis will have a large impact in the decision on which updates are implemented.

We would like you to collect all experiences you and your organization have from working with the DID-list (2014). Please fill out the form attached to this letter with data that you think need to be updated and why. If you have any substances that you lack on the list, please add them to the table as well. If you have information contradiction data the DID-list 2014, or if you have supplementary data of any kind, please inform us, and we will consider your proposals.

Please add your contact information at the bottom of the "submission of data"-file when sending it to the Nordic Ecolabelling to make it possible for us to contact you with complementary questions during this project.

We look forward to receiving your comments and data by **April 18<sup>th</sup> 2016**.

Best regards,  
Susanna Vesterlund  
Project manager, Nordic Ecolabelling

### Submission of data to update the DID-list

**Table 1.** Update of substances on the DID-list (2014)

Did nr	Chemical name	CASnr	Documentation (file name)	Acute toxicity		Chronic Toxicity		Degradation		Remarks
				LC50 EC50	Test organism	NOEC LOEC EC10	Test organism	Aerobic (Y/N)	Anaerobic (Y/N)	

**Table 2.** New substances that you would like to include on the updated list

Chemical name	CASnr	Documentation (file name)	Acute toxicity		Chronic Toxicity		Degradation		Remarks
			LC50 EC50	Test organism	NOEC LOEC EC10	Test organism	Aerobic (Y/N)	Anaerobic (Y/N)	

### Contact information

Name:  
 Company:  
 Phone number:  
 E-mail address:

## **Appendix 2**

### **Received input**

A brief summary of the answers/inputs received is presented in this appendix.

### **Clarification of ingredient names**

The project group received a number of inputs regarding unclear naming of ingredients, and/or questions about which substances can be included in certain DID-numbers. We have tried to clarify the names for several ingredients, as stated in the results section.

The project group also received requests for clarifications on DID number 2502, 2507, 2508, 2515, 2523, 2551, 2552, 2603 and 2605. These have not been prioritized in this revision, mainly because of the limited resources in the project.

### **Overlapping DID-numbers**

The project group received some input regarding apparently overlapping alkyl chains for several surfactants with different DID-numbers. However, it should be noted that a narrow alkyl chain length distribution does not cover a broader one e.g. "C12-14" does not cover "C12-18". Equally a broad alkyl chain length distribution does not cover a narrower one e.g. "C12-18" does not cover "C12-14"<sup>2</sup>. Hence, most of this input was disregarded.

### **New ingredients**

Eight new ingredients that were requested were added to the DID list. Five of these are new DID-numbers and three were included in existing numbers (see the results section). Six more ingredients were requested, but were not added to the DID list. Two of these could not be included due to lack of available data. The other four were non-ionic surfactants that were requested by a manufacturer. These were not included because of the limited resources in the project. Inclusion of new, single substances based on direct input from manufacturers/suppliers was outside the scope of this project. Furthermore, a few ingredients that were suggested appeared already to be on the DID-list.

### **New data on ingredients already on the DID-list**

New data was added to several existing ingredients (see the results section).

For some existing ingredients, we received chronic toxicity data for algae only. This data has been disregarded, in line with the principle that algae data cannot be used alone in order to establish a chronic toxicity factor (see 2014 DID-list report<sup>1</sup> and DID list part B).

The project group received a request for change of anaerobic degradation for DID 2114 and 2115 from O to Y. However, based on the information

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<sup>2</sup>[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono\(2014\)6&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mono(2014)6&doclanguage=en)

that we received for anaerobic degradation, a change from O to Y for all substances that are covered by DID 2114 and 2115 was not supported.

For one ingredient (DID 2408) the project group received data that was supposed to be new, but closer examination revealed that DID 2408 was already based on the same data. Hence, the input was disregarded.

### **Preservatives (Biocides)**

One stakeholder suggested update of the preservative section of the DID list. The project group reviewed the preservative section and removed the two substances that are neither allowed as PT6 preservatives in the EU (Regulation (EU) 528/2012) nor allowed as preservatives in cosmetics in EU (Regulation (EC) No 1223/2009), i.e. DID number 2409 and 2417. Other changes, e.g. dividing the section into separate parts for cosmetics and technical/chemical products, might be desirable, but the project group has not been able to prioritize this with the limited resources of the project.

### **Typing errors**

The project group received some input regarding typing errors in the DID list. These typing errors were corrected.

### **CAS-numbers**

Several stakeholders suggested the inclusion of CAS-numbers. Unfortunately, that is outside the scope of this minor revision. The inclusion of CAS-numbers in the DID-list is further discussed in the 2014 DID-list report<sup>1</sup>.

### **Input to DID-list part B**

The accepted test methods for aerobic and anaerobic biodegradation were added to DID-list part B, as requested by one stakeholder. Another stakeholder suggested that the instructions of how to calculate the toxicity factors could be improved. This has not been prioritized in this revision.