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Revision of the harmonised Detergent Ingredient Database

Final report

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Introduction

Ecolabelling Norway was assigned by the European Commission as lead Competent Body for the revision of the Detergent Ingredient Database ("DID-list") for the EU Ecolabel.

The project has been implemented in three phases,

- Evaluation of the present list,
- Updating and adding of new data
- Evaluation of new data.

The revision project to update the DID-list started in January 2012 and finished by the end of 2013.

1 Executive summary

Evaluation of 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 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 2007. There is also a constant development of new products and new product groups that cannot be readily placed in any of that DID-list's entries. There has also been some criticism on what impact certain factors have. Therefore there was a need to evaluate and revise the whole list including the framework and calculation methods.

Information about the project group

Ecolabelling Norway has signed a contract with the European Commission to carry out the technical work on revising the list. Norway has been assisted by a project group consisting of representatives from the competent bodies in Sweden, Denmark and Finland. This has ensured a close relationship within the Nordic Ecolabel. Furthermore, meetings have been held with the chemical industry and with external ecotoxicologists, Tina Slothus and Torben Madsen from DHI. Torben Madsen was also engaged in the revisions in 2004 and 2007.

The ad hoc working group

An Ad Hoc Working group meeting was held in Brussels on June 12th 2012. All interested parties were invited to join the meeting and/or send in feedback (summarize is found in appendix 1). The framework of the DID-list was discussed in detail. Prior to the meeting stakeholders had proposed changes to the presentation of degradability, the safety factors and to the CDV-calculation. The main problem: the very high safety factors on substances where only a few acute toxicity tests had been available in 2004 and 2007, was identified. However, it was decided to keep the present framework in general, but the industry was encouraged to provide more chronic test data, and also on several trophic levels to assure a lower safety factor for the substances. Minutes from the meeting are to be found as appendix 3.

Collection, priority and evaluation of data

The aim of the revision was to facilitate the ecolabel application process for applicants and the assessors in the Competent Bodies by gathering chronic data for as many substances as possible and to reduce the number of substances with a high safety factor (SF on 5 000 and 10 000). The DID-list also serves the purpose of encouraging the use of compounds with the lowest environmental impact through ranking the compounds according to their ecotoxicity and degradability. Collection of data from on new and more

environmental-friendly substances and improved data on already listed substances has been emphasized.

The project group has received data directly from stakeholders, and close cooperation was established with the chemical industry, especially with the surfactants producers in CESIO. All parties interested in a dialogue were encouraged to contact the project group. Data were also collected from ECHAs website and reports from HERA and ECETOC. Data were handled with strict confidentiality.

In the work on updating the DID-list the following priorities have been applied:

1. The comments from the stakeholders were regarded – for DID 5/6, 10, 21, 28/29, 30, 34/35, 40, 47, 49, 110, 115, 123, 124, 129, 135 and 137/138 existing data were checked for errors in data or grouping.
2. Adding chronic data or (if no chronic data) acute data on more trophic levels. This will contribute to lowering SF.
3. Adding data for anaerobic biodegradability.
4. Adding new chemicals with a special focus on ingredients often used in cleaning, soaps and shampoos (E.g. oils).

The evaluation of data has been performed according to the guidelines presented in chapter 7.4.

Data collection

All parties interested in a dialogue were encouraged to contact the Project group and confidentiality agreements were established. Data were submitted in a summarized form, se chapter 7.3.

Rikke Gleerup Ovesen was responsible for the data collection.
Data were initially to be submitted no later than 15.11.2012. Because of a deadline for delivering data to ECHA in May 2013, the period for collecting data to the DID-list was extended to June 2013. Through the cooperation with Cesio, data was also received in the autumn 2013.

Data from the DID-list of 2007 is used in cases where stakeholders have not submitted data to the project, and where no new data was available on the ECHA website, in HERA reports, or at ECETOC.

Results

The DID-list has been extended from 204 to 242 substances, mainly because the surfactants have been divided in a different way, but also because new substances have been added to the list.

In close cooperation with the industry, 60 surfactants have been divided into 100 new entries on the list. The names of the substances are now to a much greater extent equal to the names on the material safety data sheets, and thus facilitate the application process for all parties.

Chronic data have been obtained for 35 DID-numbers, which only were presented with acute toxicity data in the old list, and for 30 other

substances the chronic data has been updated. The safety factor has been reduced for many of these because of this, and also because data on more trophic levels has been added in the database.

The DID-list still include 30 substances with SF 5 000, and 13 substances with SF 10 000, but the numbers have been reduced significantly. The amount of substances with the lowest factor, SF=10, has increased from 13 to 65 DID-numbers.

Four substances have been identified which are very toxic, but which degrade extremely rapid when used. A new degradation factor, DF=0.01 has been introduced for these. This factor is an exception and shall not be used when evaluating substances not on the DID-list according to Part B of the DID-list.

The use 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.

In the application process for the EU Ecolabel and the Nordic Ecolabel scheme, the data on the DID-list shall be used, even if chemical producers can show other test results. There are only two exceptions from this rule:

- For substances not tested for degradation and marked with "O" in the columns for degradation the producer shall provide information on degradation according to the ecolabel criteria.
- For perfumes and dyes specific toxicity data from the producers are accepted.

The DID-list of 2014 will have an effect on the CDV criterion in current criteria documents and for some product groups, the CDV value may be significantly different. The project group recommends that the Nordic Ecolabelling and the EU Ecolabelling evaluates how they should implement the DID-list of 2014 in the current criteria document.

2 The purpose of the DID-list

The Detergent Ingredients Database, the DID-list, is a tool for the competent bodies in the Nordic Ecolabel and in the EU Ecolabel schemes.

The DID-list is an ingredient database consisting of the most common chemicals used in chemical-technical products such as e.g. detergents and cosmetics. The DID-list must not be regarded as a "positive-list".
The list contains substances that may be used in ecolabelled detergents, but also several substances, which do not fulfil the Ecolabel criteria. The list even contains some substances that cannot be used in detergents sold at all within Europe, for instance inherently biodegradable surfactants. The reason for including these substances is to serve as guidance to detergent producers and encourage a shift to less environmental harmful ingredients.

Each DID-list entry is based on evaluated data collected from chemical producers and grouped in relevant clusters. Part A of the list includes data on acute toxicity, chronic toxicity, aerobic biodegradation and anaerobic biodegradation. Part B describes how to acquire and handle data regarding chemicals that are not found on the DID-list in order to carry out CDV calculations (further information in chapter 5.1). The CDV calculation (Critical Dilution Volume) is an important tool in both ecolabelling schemes.

The DID-list is a tool for ranking ingredients. This is done through dividing substances into groups that are then compared with each other. The main purpose is to ensure that all licence applications are treated the same way regardless of which criteria document, application handling organization (The EU Ecolabel or The Nordic Ecolabel) or country the application concerns. It also secures that the same values are used for similar ingredients no matter how and by whom the ingredients are manufactured and tested. Finally, the list serves as an aid to manufacturers, especially SMEs (small and medium size enterprises) to substitute ingredients with a negative environmental impact and to find ingredients that fulfil the criteria.

The DID-list is not meant to be used for regulatory purposes such as REACH. The main purpose of the DID-list is to rank the compounds according to their ecotoxicity and degradability including anaerobic degradation. The compounds are therefore grouped into specific DID-numbers. The toxicity data in the DID-list is based on other principles than required by the authorities, such as using the median value and including 5,000 and 10,000 as safety factors, and should be used for applicant for the ecolabels or for benchmarking with the ecolabel criteria. The DID-list is only a tool developed by the ecolabel schemes, and cannot be regarded as ecolabel criteria as such. The criteria documents for the different product groups must be consulted in order to determine whether a specific substance can be used in an ecolabelled product or not.

3 Historical background of the DID-list

The first DID-list was developed in 1993-94 by the EU Ecolabel when the EU Ecolabel developed the first criteria for detergents. The Nordic Ecolabel soon developed a similar chemical list partly based on the DID-list, but significantly different both in the framework and in the calculation method. The European Commission took the initiative to revise the DID-list in 2002, with the aim to develop a harmonized DID-list, which could be used by both ecolabel schemes. The DID-list was also made available for other ecolabel schemes in the EU Member States. The harmonized DID-list was finalized in 2004, and adopted by the European Commission and by the Nordic Ecolabel.

When the DID-list was revised in 2004, it was perceived as a "living" document, which should be updated regularly. There is a continuous development of new chemicals and detergent products, and the industry is testing new and old chemicals for toxicity and biodegradability. This is important information that should be included in this Ecolabel tool.

However, it has been difficult to obtain financing for revisions, and the list has only been updated once, in 2007. During this revision it was decided

only to look at certain chemicals where only few data was collected in 2004, and where the industry by 2007 could provide updated information. Some new chemicals were also added to the list.

During the 2004-revision, the framework and scientific principles for how to build up and how to use the DID-list was extensively discussed, and it was decided not to repeat this work until new chemical legislation or other major changes in the European chemical policy made this necessary.

4 The framework of the new DID-list

4.1 Toxicity

Prior to the development of the harmonized DID-list in 2004, the EU Ecolabel criteria were based on chronic toxicity data, while the Nordic Ecolabel used acute toxicity mainly because of the lack of chronic data. Scientists agree that the CDV chronic gives a more accurate picture of the environmental effects of a given substance. The DID-list, however, still includes acute data even though chronic data becomes more available today.

4.1.1 NOECs or EC-values

Ecotoxicity is evaluated using parameters from ecotoxicological tests, where the effect of different concentrations of a compound is measured. The results can be expressed as the effect concentration at different percentages of effect, e.g. EC_{10} or EC_{50}, which is the calculated effect concentration at 10% or 50% effect. Measured effects may be on for example growth rate, immobility or mortality, depending on the test organism. Also the LOEC (Lowest Observed Effect Concentration) and the NOEC (No Observed Effect Concentration) are used as parameters. LOEC is the lowest of the tested concentrations where a statistical significant effect different from the control is found. The concentration just below LOEC will be the NOEC. Because the NOEC and the LOEC are actual concentrations that are used in the test, they are highly dependent on the experimental design, i.e. which concentrations are tested and the number of concentrations tested. Therefore EC_{10}-values are preferred over NOEC-values, as they are calculated values. NOECs and LOECs are, however, accepted for the DID-list as well as it is in REACH.

4.1.2 Test methods

The following standard test methods or equivalent methods are accepted for acute toxicity: 201 (algae), 202 (crustaceans) and 203, 212 (fish) in the OECD guideline for testing of chemicals. For chronic toxicity 201 (algae), 211 (crustaceans) and 210, 215 (fish) in the OECD guideline for testing of chemicals are accepted. The data are only accepted as chronic if the tests are conducted for 72 to 96 hours (algae), 21 days (crustaceans) and 14 to 60 days (fish) depending on the test method. If equivalent methods are used, an independent body must evaluate these to ensure that the test results are equivalent.

4.1.3 Calculation

When calculating the toxicity factor, several options can be chosen when there is more than one set of data on the same species or trophic level. The

strictest option or 'worst case'-option is to choose the lowest toxicity value, thus taking the most sensitive species/trophic level into account. This will however, give weight to 'outliers'. Some of the DID-numbers cover several chemicals with similarities and it would not necessarily make sense to use the lowest value of one specific compound to represent a number of compounds covered by one DID-number.

Another approach is to calculate the mean. There are multiple ways to calculate the mean: either the geometrical mean, the arithmetic mean or by using the median value. The range of data does not affect the median value. The geometric mean normalizes the change in data, so that a given percentage change in one data point has the same weight regardless of the value of the data point in contrast to the arithmetic mean, where a change in the higher numbers has a larger effect on the result than a change in the lower values. In general, the choice of method will have less influence if the data set is large.

The advantage of using the geometric mean is that the uncertainty is reduced. Also, certain other recommended procedures for risk assessment and life cycle assessments use the geometric mean, which makes it possible to use the data directly. The disadvantage is that it assumes that data are lognormal, which is not always the case for the available data.

A comparison between the median, the arithmetic and the geometric mean of a number of randomly chosen data used for the DID-list of 2007 showed that most of the compounds are only represented by a single test result and in these cases the choice of calculation method does not matter. For the compounds where several sets of data were available, the geometric mean gave the lowest value (i.e. the 'worst case'). However, the differences between the geometric mean, the arithmetic mean and the median value were small. This pre-assessment also showed that re-calculating the mean would require extensive work on the already existing data.

It was therefore decided to continue to use the median value, as it was done in the previous versions of the DID-list (2004 and 2007). For more extensive data sets, the median value for each trophic level (fish, crustaceans and algae) was determined, and the value for the most sensitive trophic level is presented on the list.

4.2 SF, safety factor

The safety factor (SF) is based on availability of aquatic toxicity data. It depends on how many trophic levels that have been tested and if it is acute or chronic test results, as seen from the table below.

Table 1: Safety factors used in the DID-list 2014

Data	**Safety factor (SF)**
1 short-term L(E)C50	10 000
2 short-term L(E)C50 from species representing two trophic levels (fish and/or daphnia and/or algae	5 000
At least 1 short-term L(E)C50 from each of three trophic levels of the base-set*	1 000
One long-term NOEC or EC10 (fish or daphnia)	100
Two long-term NOEC or EC10 from species representing two trophic levels (fish and/or daphnia and/or algae)	50
Long-term NOEC or EC10 from at least three species (normally fish, daphnia and algae) representing three trophic levels	10

*The base-set for testing the toxicity of substances towards aquatic organisms consists of acute tests with fish, daphnia and algae.

The parameters are the same as the parameters given in REACH Guidance documents (Chapter R.10) for the freshwater compartment except for the two highest parameters (5 000 and 10 000). The highest parameter of 10 000 is an option in the assessment of the marine compartment according to REACH Guidance. In the DID-list, these two highest levels were added on top of the safety factors for the freshwater compartment to be able to handle chemicals with no chronic toxicity data and to encourage the generation of more chronic toxicity data.

In the DID-list of 2007, the factor of 5 000 was used 46 times out of 204 DID-numbers and the highest factor of 10 000 was used 26 times out of 204. The lowest parameter of 10 has been used 13 times of the 204 DID-numbers indicating the lack of chronic data.

The two highest safety factors (10 000 and 5 000) have been heavily criticized. The critique is mainly based on the fact that the use of these two factors gives great weight to the toxicity compared to the weight of the degradation. Furthermore most organic compounds are degraded in the wastewater treatment plants before they reach the environment in Europe and therefore the degradation should have the same weight as the toxicity.

Over the years, the amount of data has increased, especially in connection to REACH, so it is expected that the percentage of compounds that will get the two high factors after this revision will be reduced.

From the AHWG-meeting it was suggested only to use the levels in the guidelines for REACH, meaning max 1 000, when not relating to the marine environment, regardless of the amount of trophic levels that has been tested. However the project group emphasized on the meeting that, as long

as there are still substances with very small amount of toxicity data, which only have been tested for acute toxicity on one trophic level, there is a need to distinguish between these and other substances where the toxicity factors are based on more solid grounds. For now, a safety factor above 1 000 is the best way the toxicologists have found to obtain this.

It is widely accepted by scientists that chronic toxicity data are more environmentally relevant than acute toxicity for detergent ingredients. The detergents are released continuously into the environment, and the species are affected by a low concentration of the substances at any time.

The industry was asked to provide more chronic data, and the project group has looked for more chronic data in open sources in order to eliminate the need for using the two highest safety factors.

4.3 TF, toxicity factor

The toxicity factor (TF) is defined as the aquatic toxicity (NOEC, EC_{10}, EC_{50} and LC_{50}) divided by the safety factor (SF). The lowest toxicity value of the three values in the toxicity 'base set' (fish, crustaceans or algae) is used for the DID-list. For all chemicals, an acute toxicity factor and a chronic toxicity factor has been calculated. The current data is mostly on acute toxicity expressed as LC_{50} or EC_{50}, as there has been a lack of available chronic data. TF chronic has then been calculated with the acute data and with the corresponding safety factor, where NOEC/EC_{10}values are missing. For a few substances chronic data were available but no acute data. Here, the TF acute is derived from TF chronic.

Data in the DID-list are used for ranking chemicals and it is mostly based on acute toxicity data due to the lack of chronic data.

4.4 Aerobic degradation

Degradation under aerobic conditions (where oxygen is available) is given in the DID-list as in table 2.

Table 2: Labels for different categories of aerobic degradation

Category	**Label**
Readily biodegradable	R
Inherently biodegradable	I
Persistent	P
Not tested	0 (zero)

The substances must be tested according to test method No. 301 A-F or 310 (readily biodegradable) or 302 A-C (inherently biodegradable) in the OECD guidelines for testing of chemicals or other equivalent test methods. These test methods estimate the content of the substance left in the recipient after degradation.

4.5 DF, degradation factor

The degradation factor was decided in the 2004 revision, and the full descriptions of the values are described in the background report from 2004.

4.5.1 Test methods

The degradation factor refers to degradation under aerobic conditions, i.e. degradation where oxygen is available. Test methods 301 (A to F) or 310 in the OECD Guidelines for the Testing of Chemicals (ISBN 92641222144) are used to test aerobic biodegradability. The pass levels for ready biodegradability in test method 301 are 70% removal of DOC and 60% of ThOD or ThCO2 production for respirometric methods. Biodegradation >60% ThIC within the 10-days window in test method 310 demonstrates that the test substance is readily biodegradable under aerobic conditions. Test method 302 (A to C) in the OECD Guidelines for the Testing of Chemicals (ISBN 92641222144) is used to test inherent biodegradability. For a constituent substance to be considered ultimate inherently biodegradable a mineralisation of >70% after 28 days is required (>70% BOD/DOC/COD reduction). Other scientifically accepted test methods may also be used. An independent body must evaluate the test results of such equivalent methods. Degradation in anaerobic conditions is described in chapter 5.6 below.

4.5.2 Value of the degradation factor

The degradation factor illustrates to which extent each substance is degraded before reaching the recipient. For example the removal is 95% for a readily biodegradable substance with a DF of 0.05. It is thus anticipated that only 5% of the substance reaches the recipient. An ingredient is termed "persistent" if it does not fulfil the criteria for inherent biodegradability. Substances that have not been tested for ready or inherent biodegradability, is given the value O in the list. In CDV calculations they are treated as persistent.

A distinction has been made for readily biodegradable substances that pass or do not pass the 10-day window[1] criterion. The degradation factors are set to 0.05 respective 0.15.

Table 3: Degradation factors in the DID-list of 2014

Category	**Degradation Factor, DF**
Instant degradation (*)	0.01
Readily biodegradable (**)	0.05
Readily biodegradable (***)	0.15
Inherently biodegradable	0.5
Persistent	1

(*) Instant degradation factor shall not be used when evaluating other substances, which are not on the DID-list.
(**) All surfactants or other ingredients that consist of a series of homologues and which fulfil the final degradation requirement of the test shall be included in this class regardless whether the 10-day window criterion is fulfilled or not.
(***) 10-day window criterion is not fulfilled.

The values for 'Readily biodegradable', 'Inherent biodegradable' and 'Persistent' in Table 3 were set as a scaling between readily biodegradable

[1] "10-day window criterion" refers to a degradation according to OECD-guidelines where a minimum level of degradation has to be achieved within a 10 days window of the test period (28 days).

substances (with an assumed emission of max. 5% to the environment) and persistent substances (with an assumed emission of 100% to the environment).

Inorganic substances as such are not degradable and thus the term Degradation Factor should rather be understood as 'removal'. In terms of their fate in the environment there are two groups of inorganic substances:

(a) Substances for which a DF of 0.05 is assigned: Substances that may be utilized as nutrients or in microbial respiration processes (sodium nitrate, phosphate, phosphoric acid, carbonate, ammonia)
(b) Substances for which a DF of 1 is assigned: Substances that are expected to persist in the environment although with changes in their physical or chemical forms (e.g. zeolite, clay, silicates, perborates, silicon dioxide, sulphamic acid)

A new Degradation Factor has been use for a few substances that the scientists have recognised as having an exceptional fast degradation. The value for Exceptional Biodegradation has been set to 0.01 and used for four substances: enzymes, hydrogen peroxide, carbonates and percarbonates. The exceptional DF of 0.01 was proposed at the AHWG-meeting, and the ecotoxicologists found to accept the proposal in these special cases, because these substances degrade very quickly when used in detergents, and the substances are not at all measured in the recipient.

4.5.3 The "10-days window"

In the DID-list the "10-days window" principle is applied. According to the OECD Guideline, a minimum level of degradation (as described above) has to be achieved within a 10 days window of the test period (28 days).

It has been previously argued that this criterion should not be applied on chemicals that are series of homologues (which for instance surfactants often are). The microorganisms will first start to degrade the easiest degradable homologue, then the second best, and so forth. Even if all the single homologues pass the 10-days-window the resultant degradation curve for the mixture will not. Many ecolabel criteria have the requirement that all surfactants must be readily biodegradable. We have reasons to believe that manufacturers claim that their products are readily biodegradable if they fulfil the final degradation percentage but not the 10-day window requirement.

Based on the above, it is considered reasonable to accept all surfactants that consist of a series of homologues as readily biodegradable when the final degradation percentage is fulfilled, even if the 10-days window criterion is not fulfilled.

Other ingredients also consisting of a group of homologues should be treated in the same way as surfactants.

4.5.4 Alternative DF: "Half-time"

An internal report made by an external specialist for the Nordic Ecolabel in 2011, suggested changing the DF-factor from the present approach described above, and to introduce half-time. This would give a factor that is related to how long it takes for different substances to degrade to 50% of the original. This would then mean that there would be a larger range between the lowest and the highest values for DF. This could secure a better balance between the weighting of the toxicity (SF) and degradation (DF). The main draw-backs with such an approach is that there is a lack of data on half-life and that the half-life does not always correspond to a complete demineralization, such as for example the test of readily biodegradability, but rather a transformation from the original set of molecules to new molecules.

In this revision we proposed to keep the degradation factors as they were determined from the start (in 2004). Mainly because the DFs used then were based on facts and because the change to the half-life does not give so many advantages as to make a significant difference.

Keeping the DF unchanged gives the advantage of more available data. Another advantage is that the data for complete mineralization takes degradation of possible metabolites into account, which is not the case for half-life data. This leaves out possible adverse effects that metabolites may induce and a possible accumulation of metabolites that may be bioactive and possibly more stable compounds. The difference between toxicology and degradation must then be compensated for by an increase in toxicity data, and thereby lower safety factors.

4.5.5 Removal

At the meeting it was also mentioned that the use of the term "degradation" is not good. First of all, degradation of the inorganic substances is incorrect, as they are not degraded. Secondly, it is well known that other types of "removal" take place in the recipient. It was suggested to add an extra column in the DID-list, called "removal factor", that could overrule the DF factor, if information about other types of removals is proved for certain substances.

As explained in details in the background-document for the revision of the DID-list in 2004 (published on the EU Ecolabel website), a "removal factor", called the loading factor, was given in the DID-list before 2004 based on elimination in wastewater treatment plants. This was taken out because the ecolabel-schemes preferred a list based on intrinsic properties of the substances. It was also a problem that the then called "elimination factors" were set without transparency by an industry-group together with one toxicologist back in 1994, and no background information about this process were given to the European Commission. It was also argued that the elimination factor had little effect on the ranking of the substances within each category of substances.
As also explained in the revision of the DID-list in 2004, the removal factor was partially based on log K_{OW}, which is a measure of the lipophilicity of the compound and is thought to indicate the tendency of bioaccumulation (see 5.7.1), and is also used as an estimate for sorption to organic particles. A

high log K_{OW} indicates a high lipophilicity and hence, an increased risk of bioaccumulation and sorption. One stakeholder at the meeting explained that a consumer test institute in Germany has made a HAD list, where Log K_{OW} and abiotic elimination is compared. It was suggested using this to create another DF factor/Removal factor. The project group have not looked at the HAD-list, because log K_{OW} does not always provide a reliable measure of the removal of compounds. Removal of compounds includes a wide variety of processes that involves other parameters than lipophilic properties of a compound. In addition, log K_{OW} is very difficult to measure for e.g. surfactants with the current test method and is therefore in many cases based on estimation. The estimations are not always reliable, as they are based on experimental data for compounds that are very different from surfactants. The project group therefore recommends not including log K_{OW} as a new parameter in the DID-list, as handling log K_{OW} data in the daily work of ecolabelling will require specialist assessment.

Based on the discussions above, the degradation factor has been kept unchanged, except for the factor of 0.01 for four specific substances mentioned above.

4.5.6 Perfume and dyes

Perfumes and dyes (DID no 142 and 143) are typically added as mixture, usually with unknown toxicity data, and are usually not tested for degradation. Toxicologists set the TF and DF for these in 2004 based on their general knowledge in the field.

As a worst case scenario fragrances in a perfume mixture can be considered to be non-biodegradable. However, as perfumes typically contain also other ingredients such as solvents, they have been given the DF=0.5 in the DID-list assuming that 50% of the perfume mixture is readily biodegradable. As the active content of dyes is typically 100% the worst-case scenario is that the entire amount of dye used is persistent. Thus the DF 1 is applied for dyes by default.

If the chemical supplier can provide actual data on the specific mixtures used in a product, the applicant can use these when calculating the CDV.

4.6 Anaerobic degradation

Anaerobic degradation refers to degradation in absence of oxygen.
A substance is regarded as anaerobic degradable if one of the following tests (or similar) is fulfilled with the requirement of at least 60% degradation under anaerobic conditions:

- EN ISO 11734
- ECETOC nr 28 June 1998
- OECD 311

By prohibiting or limiting the use of substances that are not anaerobic degradable The Nordic Ecolabel and the EU Ecolabel wants to ensure that potentially harmful substances will not end up in for example sludge or sediments.

Table 4: Anaerobic degradation

Category	**Label**
Anaerobic not biodegradable, i.e. tested and found not biodegradable.	N
Anaerobic biodegradable i.e. tested and found biodegradable or not tested but demonstrated through analogy considerations etc.	Y
Not tested for anaerobic biodegradability.	O
Not applicable	NA

There has been a discussion at European level on the relevance of testing anaerobic biodegradability for chemicals that are biodegradable in aerobic conditions.

The EU Commission Report on the anaerobic degradation of detergents (COMMISSION OF THE EUROPEAN COMMUNITIES, 2009) concludes "that anaerobic biodegradability should not be used as an additional pass/fail criterion for the environmental acceptability of surfactants such as LAS which are readily biodegradable under aerobic conditions. Concerning the recently produced data on the terrestrial toxicity of LAS leading to an increased PNECsoil (which reduces the PEC/PNEC ratio and thereby diminishes the predicted environmental risk from LAS in anaerobic sludge and soil) this should be better substantiated as requested by SCHER in its opinion of 2008".

The EU Commission Report, however, concludes that some environmental concerns still remain and that it is expected that the REACH registration process will eventually fill in data gaps. Somewhat too optimistic expectations have, however, been placed on REACH with respect to the amount of new information that will be acquired through the registration process in the nearest future. Not even the application of the REACH-regulation will automatically generate vast amounts of new information on anaerobic degradation of registered substances in the short term: according to annexes VII-X tests on anaerobic degradation may be proposed by the registrants in case the Chemical Safety Assessment indicates that more information should be acquired on the degradation of the substance.

One advantage of having the parameter "anaerobic degradation" in the DID-list is to have this information collected in one list, which would facilitate the application process in cases where there is requirement on anaerobic degradation in the criteria.

In conclusion, data on anaerobic degradation will not be included in the REACH registration dossiers by default. However, the ecolabel schemes want to keep the parameter anaerobic degradation in the DID-list. This will help us to assess the risk of potentially harmful substances to end up in sludge (and eventually soil) or sediments in unacceptably high concentrations.

The possibility has also been discussed to apply a similar gradual approach to anaerobic degradation as the DID-list has on aerobic degradation today. However, the currently acceptable test methods for anaerobic degradation

only give a simple "yes" or "no" answer to the question whether the requirement of 60% degradation is fulfilled.

Hence, our conclusion is that at this point it seems not feasible to introduce a gradual approach to anaerobic degradation within the DID-list. This is mainly because data on this endpoint is generally scarce, and at present no scientifically justified methods would allow for this kind of approach.

At the AHWG-meeting one stakeholder argued that the test OECD 311 does not reproduce any environmental condition, and it was said we also should evaluate the risks for non-anaerobic degradation in soil and sediments (OECD 307 and 308) At the start of the project, the project group stated that it was of great interest to get test-result based on OECD 307 and 308 to be able to evaluate them, as well as OECD 311. However, only a few results have been reported based on OECD 311, and no test-results on OECD 307 and 308. Therefore it has not been possible to evaluate OECD 307 and 308 and only results from OECD 311 have been used in the DID-list 2014.

4.7 Other parameters

4.7.1 Water solubility

In the revision of the DID-list 2014 the water solubility was considered, because it has influence on the ecotoxicity of a substance. Poorly soluble substances have been listed with an ecotoxicity of 100 mg/L, if no toxicity has been recorded up to the water solubility in the present version of the DID-list. A 100 mg/L has been chosen, as it is the recommended maximum test concentration in the OECD-guidelines for test of ecotoxicity. The SF is determined similar to other data based on the number of trophic levels.

4.7.2 Bioaccumulation

Bioaccumulation is a measure of how organic substances accumulate in an organism. The process leads to a higher concentration of the substance within the organism than in the surrounding media[2].

Bioaccumulation can also be related to the octanol-water partition coefficient (K_{OW}) for a specific substance. A higher hydrophobicity leads to a higher tendency to bioaccumulate, with some derogation such as methyl mercury (which accumulates to a higher degree than what can be expected from the K_{OW})[3].

Log K_{OW} and BCF (bioconcentration) factors are used to assess whether a substance is bioaccumulative or not. According to the CLP-regulation[4] a log $K_{OW} \geq 4$ or BCF ≥ 500 indicate that a substance has a potential to bioaccumulate.

The main advantages of including bioaccumulation in the DID-list would be to have this information collected in one list, which would facilitate the

[2] www.biology-online.org
[3] www.biology-online.org
[4] http://www.echa.europa.eu/documents/10162/13562/clp_en.pdf

application process in cases where the ecotoxicological data on a specific substance is poorly documented.

According to the REACH legislation it is not mandatory to declare information on bioaccumulation for example in cases where direct exposure of surface waters is not likely and therefore many registrants will probably not acquire that information.

There is a discrepancy between the REACH and CLP Regulations as to when a substance is bioaccumulative (BCF ≥ 500 according to CLP and ≥ 2000 according to REACH, a difference by a factor 4). There are also differences between how the EU Ecolabel and the Nordic Ecolabel consider a substance to be bioaccumulative, and the way the demands are formed.

Based on the above-mentioned facts it was suggested not to add bioaccumulation information on the DID-list.

This issue were up to discussion at the AHWG-meeting where the project group suggested not adding the parameter in this revision mainly because it will take up the limited resources to the DID-list revision.
The meeting participants did not object to this. Bioaccumulation was there for not taken into account in this revision.

4.7.3 Other trophic levels

Testing of vertebrates such as fish, is becoming more and more limited and therefore it is discussed whether other trophic levels should be accepted in the set of acute toxicity tests.
Other trophic levels than the base set levels (algae, daphnids and fish) such as bacteria may be included in the evaluation of the toxicity of a compound. Bacteria are in general, not the most sensitive organisms in laboratory tests. Including bacteria as yet another trophic level to the accepted test for the DID-list would therefore only influence the assessment factor and not contribute to a potentially lower toxicity value. This would therefore not raise the protection of the environment. In addition, ECHAs guidance document chapter R.10 does not include bacteria as organisms that will lower the assessment factor. Therefore we do not recommend extending the set of trophic levels to include bacteria.

During the AHWG-meeting there was a short dialog about the alternatives to fish-toxicity tests, like egg larvae test. One participant explained that it is not yet approved as a trophic level, since the standard test method is not yet finished. No one at the meeting knew when that should be finished, but it was suggested to ask OECD. The project group points out that there already exists a standard OECD guideline (212) for testing early life stages of fish, i.e. eggs and larvae. Furthermore the guideline for testing early life stages for fish (Guideline no. 230 Fish Embryo Toxicity Test, FET test) has been developed by the OECD as an alternative to the acute toxicity test (203).

Therefore it was decided to accept these methods as adequate for the DID-list (OECD 210, 212, 215 and 229) as well as the acute toxicity test of fish (OECD 230) to maintain this trophic level. The OECD tests 210, 212, and

215 are all accepted for evaluation of the toxicity in fish in REACH chapter R.7b. Even though an expanding the set of tests accepted for the DID-list could make it easier to obtain data for this trophic level, no data based on these test methods have been sent in.

The same situation is the case for test-result based on OECD 229 and 230. No test-results based on these guidelines have been presented during the revision. Therefore it has not been possible to evaluate OECD 229 or 230 and only results from OECD 203, 210 and 212 have been available and therefore used in the DID-list 2014.

4.8 Brand names/CAS-numbers

The inclusion of CAS-numbers in the DID-list would be a welcome addition, which would facilitate the application process both for the applicant and the inspector. However, this is not entirely unproblematic due to the nature of DID-list entries. Some DID-numbers can cover a large number of different CAS-numbers (especially where surfactants are concerned), which means that it may prove impossible in the tight timeframe to ensure that the list of CAS-numbers is comprehensive.

Conclusions from the AHWG-meeting and the project group are that it is not possible to add CAS-numbers without using large amount of resources in the project.

At the meeting it was suggested using EC-numbers instead of CAS-numbers. The project group argued that substances in ecolabelled products was also from suppliers from outside Europe, and therefore the International CAS-number system is a better suggestion than the European EC-number system.

5 Description of the use of the list

The product groups that can be labelled with the EU Ecolabel and/or the Nordic Ecolabel using the DID-list range from consumer products such as hand dishwashing detergents, laundry detergents and cosmetics/soaps and shampoo, to professional laundry detergents, car and boat care products and cleaning products for both consumers and professionals.

5.1 Critical dilution volume (CDV)

Critical dilution Volume, CDV, is a critical parameter in both EU Ecolabel and the Nordic Ecolabel. It is calculated from a formula containing toxicity, degradation and how much of the substance that is used. CDV is calculated as a sum of all the ingoing substances in the product.

For CDV the formula looks like:

$$CDV = \Sigma\, CDV_{(i)} = \Sigma\, ((dosage_{(i)} \times DF_{(i)})/TF_{(i)}) \times 1000$$

Dosage (i) is the recommended dosage of the ingredient by the manufacturer expressed in g/wash or in some cases as g/100g product.
DF (i) is the degradation factor for ingredient i.
TF (i) is the chronic toxicity factor of the ingredient i.

The values of DF and TF chronic shall be as given in the detergent ingredient database list-Part A (DID-list-Part A).

If the substance in question is not included in the DID-list Part A, the applicant shall estimate the values following the approach described in the DID-list Part B. The CDV is summed for each substance, making the CDV for the product. CDV can either be calculated based on chronic or acute data. This depends on what criteria document it concerns.

6 Collection of input on the DID-list, 2007

6.1 Collection of input

As to, in an early stage, give the stakeholders a possibility to give their input on the present DID-list and what improvements they see as necessary, a questionnaire was sent out in February-March 2012. About 20% of the stakeholders replied. The questions asked and a summary of the answers/inputs is presented in appendix 1. The input have been used to prioritizing the work on the DID-list, for example what DID-numbers were especially relevant to get improved information on, what issues were particularly important to discuss at the AHWG-meeting.

7 Collection and evaluation of data

The DID-list and the revision of it serve the purpose of encouraging the use of compounds with the smallest environmental impact through ranking the compounds according to their ecotoxicity and degradability. Therefore stakeholders have been urged to provide data to the DID-list on new and more environmental-friendly compounds and improved data on already existing compounds.

7.1 Priority DID-list update

In the work on updating the DID-list the following priority was applied:

1. The comments from the stakeholders were regarded – for DID 5/6, 10, 21, 28/29, 30, 34/35, 40, 47, 49, 110, 115, 123, 124, 129, 135 and 137/138 existing data will be checked for errors in data or grouping.
2. Adding chronic data or (if no chronic data) acute data on more trophic levels. This will contribute to lowering SF. Data from stakeholders and data easily found on the ECHA website were used.
3. Adding data for anaerobic biodegradability.
4. Adding new chemicals with a special focus on ingredients often used in cleaning, soaps and shampoos (E.g. oils).

7.2 Collection of data

During the revision process the main goal were to use updated information on the chemicals from the stakeholders. The project group wished to receive data directly from stakeholders – even data that were already available from other sources, such as ECHA's website. For DID-numbers where no data were submitted, the ECHA website were used for collecting data as it is the main channel for dissemination of data acquired from the registration of chemicals according the REACH and CLP regulation. This easy-to-use database were a useful source of information, but

unfortunately - from the point of view of the DID-revision - the data for the already listed DID-numbers were often based on the very same information that were used when the prior DID-list were compiled. For some of the existing numbers data were improved and also for new DID-numbers data were collected.

New information regarding certain substances exists, but as the registration of chemicals in REACH takes place in three phases, and only the two first phases have so far been completed, the amount of new information were rather limited. Since data are not expected to be made public on the ECHA website as soon as they have been submitted by the registrants, it was recommended that stakeholders also submitted relevant data directly to the project group.

The DID-revision has been more reliant on the information originating from the producers of chemicals and the project group worked to establish close relations to the industry in order to improve the DID-list as much as possible. In particular, this is important for parameters not published or required by ECHA (anaerobic degradation, chronic toxicity) and for substances not covered by REACH (like polymers and low tonnage chemicals). Obviously, the quality of the revised DID-list depends on our ability to collect new data from the industry and ECHA, and we were glad to see a very positive attitude from the chemical industry for cooperation in this matter.

7.3 Submitting data

All submitted data has been handled under strict confidentiality and has only been used in this DID-list revision project. All parties interested in a dialogue were encouraged to contact the Nordic Ecolabel and if needed, confidentiality agreement has been established.

Data were to be submitted in a summarized form, to optimize the work with data evaluation, in excel as shown below. The compound did not have to have data in all columns, e.g. if no anaerobic data were available, the cell "anaerobic (Y/N)" had to be left blank.

			Acute Toxicity		Chronic Toxicity		Degradation	
DID no (if existing chemical)	Chemical name	Documentation (File name)	LC50 EC50	Test organism	NOEC LOEC EC10	Test organism	Aerobic (Y/I/N)	Anaerobic (Y/N)

To be able to evaluate the data, the submission also had to include documentation providing

- the test method and
- for the ecotoxicology-test: species, duration, concentrations, temperature and pH
- for the degradation-test: concentration, temperature, pH, apparatus and determination method

Data from the DID-list of 2007 have been used where stakeholders did not submit data to the project group or were no new data available on the ECHA website, in HERA rapports, or at ECETOC.

The project group contacted stakeholders for a more thorough dialog on specific matters.

7.4 Quality guidelines for acceptance of test results for the DID-list

In this revision the guidelines for acceptance of test results as source data in appendix 2 were applied (as in the revisions of in 2004 and 2007). The guidelines are divided in two parts, required test conditions and required information. Data in the new DID-list are also evaluated according to those guidelines, in cases where a study report or article is available.

The verification of the reliability of data was somewhat more problematic when using data from the ECHA registration database. The database does not give access to the original study reports, which are the intellectual property of the registrants and not made publicly available in their entirety. This was the case with new guideline studies that registrants (often in groups consisting of several registrants) have commissioned for the purpose of their REACH registration.

The reliability of data in the REACH registration entries is communicated by using the Klimisch scoring system (Klimisch et al. 1997). According to this system each study will be given a Klimisch code ranging from 1 to 4 (sometimes also called score or index) as follows:

> **1 = reliable without restrictions**: "studies or data generated according to generally valid and/or internationally accepted testing guidelines (preferably performed according to GLP) or in which the test parameters documented are based on a specific (national) testing guideline or in which all parameters described are closely related/comparable to a guideline method."
>
> **2 = reliable with restrictions**: "studies or data (mostly not performed according to GLP), in which the test parameters documented do not totally comply with the specific testing guideline, but are sufficient to accept the data or in which investigations are described which cannot be subsumed under a testing guideline, but which are nevertheless well documented and scientifically acceptable."
>
> **3 = not reliable**: "studies or data in which there were interferences between the measuring system and the test substance or in which organisms/test systems were used which are not relevant in relation to the exposure (e.g. unphysiological

pathways of application) or which were carried out or generated according to a method which is not acceptable, the documentation of which is not sufficient for assessment and which is not convincing for an expert judgment."

4 = not assignable: "studies or data which do not give sufficient experimental details and which are only listed in short abstracts or secondary literature (books, reviews, etc.)."

The scoring is carried out by registrants themselves, and thus in the majority of cases there is no guarantee that the reasoning behind each given code/score is of uniform quality. ECHA does not check details such as this by default for all registrations.

As a result, it was decided in the DID-working group that as a rule, only studies/reports from the ECHA database with Klimisch code/score 1 should be accepted in the course of this revision. However, if additional documentation were presented, even Klimisch 2 could be considered on a case-by-case-basis.

7.5 Evaluation of data

Rikke Gleerup Ovesen, PhD has been responsible for the collection and the ecotoxicological evaluation of data and for the updating on the DID-list of 2014. The background data is partly from the literature and partly from the industry. Meetings have been held with ecotoxicologists Tina Slothuus and Torben Madsen where specific questions and ambiguities have been raised and solved.

The data behind the DID-list version 2004, 2007 and 2014 is kept in a confidential database in Norway, and is only used for the DID-list.

7.6 Adjustments based on comments after presentation in EUEB

After the DID-report was presented at the EUEB-meeting in March 2014 stakeholders were given the opportunity to comment on the DID-Report and on the DID-list. As a result of comments received and an extra quality rewiev the adjustements presented in tabel 5 were made in the DID-list. The DID-list was at the same time given a new version number, version 2014.1.

In this documentthis chapter 7.6 was added along with the word "ultimately" in chapter 4.5.1 (in the 11th line of text) and a few other editorial adjustements.

Tabel 5: Adjustments made between DID-list 2014 and DID-list 2014.1

DID 2014	Comments and adjustments in DID 2014.1
2017	TF (chronic) value was missing in DID 2014 - has been inserted in 2014.1
2029	This entrance has been removed since no acute data where available and only chronic algae data* where available
2030	This entrance has been removed – data submitted by Cesio has been misinterpreted and used for both 2030 and 2033 (in DID 2014.1 this is DID no 2030 – please see below)

2032	This entrance has been removed since no acute data where available and only chronic algae data* where available. The acute data in DID 2014 was actually chronic data that has been misinterpreted as acute data
2031	New number: 2029 (since 2029, 2030 and 2032 in DID 2014 has been removed)
2033	New number: 2030 (since 2029, 2030 and 2032 in DID 2014 has been removed)
2034	New number: 2031 (since 2031 in DID 2014 has been moved to 2029)
2035	New number: 2032 (since 2029, 2030 and 2032 in DID 2014 has been removed)
2112	Name has been changed from C12-14 Alkyl, ≥5 - ≤8 EO 1 t-BuO (endcapped) to the correct name: C12-14 Alcohol, ≥5 - ≤8 EO 1 t-BuO (endcapped)
2116	NOEC (chronic) have been changed from 0,094 to 0,1 because of a typo in the submitted data
2132	NOEC (chronic) have been removed since only chronic algae data* where available. Now TF (chron) = TF (acute) = 0,01.
2133	NOEC (chronic) have been removed since only chronic algae data* where available. Now TF (chron) = TF (acute) = 0,01.
2142	This entrance has been removed since no acute data where available and only chronic algae data* where available
2143	Name has been changed from Amines, coco, ≥10- ≤20 EO to Amines, coco, ≥10- ≤15 EO so that it is in line with the submitted data.
2146	NOEC (chronic) have been removed since only chronic algae data* where available. Now TF (chron) = TF (acute) = 0,00044.
2147	NOEC (chronic) have been removed since only chronic algae data* where available. Now TF (chron) = TF (acute) = 0,0036.
2143 – 2155	New DID numbers: 2142 – 2154 (since 2142 in DID 2014 has been removed)
2204	NOEC (chronic) have been removed since only chronic algae data* where available. Now TF (chron) = TF (acute) = 0,0034. Anaerobic data has been changed from "Y" to "O" so that it is in line with the submitted data.
2205	NOEC (chronic) have been changed from 0,068 to 0,68 because of a typo in the submitted data
2207	NOEC (chronic) have been removed since only chronic algae data* where available. Now TF (chron) = TF (acute) = 0,00345. Anaerobic data has been changed from "O" to "Y" so that it is in line with degradability data in ECHA
2401	After re-evaluating submitted data NOEC (chron) has been changed from 0,11 to 0,04
2410	After re-evaluating submitted data NOEC (chron) has been changed from 0,0036 to 0,0012

2413	Moved from "Preservatives" to "Other ingredients" after discussion with manufacturer and external expert. New DID no.: 2615
2417	Anaerobic changed from "Y" to "O" as in DID 2007. "Y" was probably a typo
2418	SF changed from 10 to 50 after re-evaluation of data in ECHA – daphnia data could not be used
2414 – 2423	New DID numbers: 2413 – 2422 (since 2413 in DID 2014 has been moved to 2615)
2506	Typo: Anaerobic changed from "O" to "Y" as in DID 2007
2529	A.I.S.E comment: "The L(E)C_{50} of butanol is significantly lower than the other substances in this group". Therefor: Name changed from C1-C4 alcohols to C1-C3 alcohols after re-evaluation of data in ECHA
2531	SF changed from 100 to 50 after re-evaluation of data in ECHA – both daphnia and algae data available
2552	Anaerobic changed from "Y" to "O" since it has not been possible to have "Y" confirmed. "O" is a pragmatic choice
2589	Aerobic changed from "I" to "R" – OECD301F test available in ECHA

*According to the DID-list part B and the report "Revision of the harmonised Detergent Ingredient Database, December 2013" Tabel 1, chronic algae data can only be used if data for fish or crustaceans exist.

8 Results

The revision of the DID-list aimed to ease the handling for applicants as well as for assessors, to reduce the number of DID-numbers with high SF (5 000 and 10 000), and to gather chronic data for as many substances as possible.

The DID-list has been extended to include 242 numbers. The DID-list 2007 included 204 numbers. The extension is 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. The non-ionic and the amphoteric surfactants have been extended with new surfactants giving a broader selection of surfactants for the applicants.

Chronic data are currently not available for all substances. Both acute and chronic data are listed in the new version of the DID-list similar to the DID-list 2007.Chronic data have been obtained for more than 30 DID-numbers, and for about 30 DID-numbers chronic data have been updated distributed over all the main groups. The safety factor (SF) has been reduced for 20 DID-numbers regarding the acute toxicity and approximately for 20 DID-numbers on chronic toxicity, because data for more trophic levels was obtained. Additionally, 35 DID-numbers listed without chronic data in 2007 have been applied with lower SF, because chronic data have been obtained at the revision.

The DID-list still includes 43 DID-numbers with SF of 5 000 (30 DID-numbers) and 10 000 (13 DID-numbers). In the DID-list 2007, the factor of

5 000 was used 46 times out of 204 DID-numbers and the highest factor of 10 000 was used 26 times out of 204. The lowest parameter of 10 includes 65 DID-numbers in the DID-list 2014 indicating the increase in chronic data when comparing with the DID-list 2007 that only had 13 DID-numbers with the SF of 10.

In the DID-list 2007 enzymes was one group. In the DID-list 2014 enzymes are divided according to their ecotoxicity distinguishing between proteases and non-proteases. This will affect product groups where enzymes are used, such as laundry detergents and dishwasher detergents. The TF (acute) of proteases are three times lower than before and the TF (acute) of non-proteases are more than three times higher than before. There has been added chronic data for the proteases giving a 10 times lower TF (chronic) than TF (acute). Both proteases and non-proteases have been assigned a five times lower DF (0.01) in the DID-list 2014 compared to the DID-list 2007, to reflect their exceptional fast degradation.

The data available for percarbonate is limited - only a few L(E)C50 values are available. To fill the gaps data are extrapolated from hydrogen peroxide. The reason for this is that percarbonate rapidly dissolves in water and dissociates into carbonate (67.5%-w/w) and hydrogen peroxide (32.5%-w/w). Therefore, the ecotoxicity of percarbonate is based on the ecotoxicity of carbonate and hydrogen peroxide where the contribution from carbonate is negligible since the ecotoxicity of carbonate is low.

The comments from the stakeholders were regarded for the DID-numbers mentioned in Appendix 1 and resulted in new listing for all except DID-number 110, natural ingredients (such as Aloe Vera), DID-number 143 dyes, and DID-number 142 fragrances. The latter was not considered, due to limited input of specific data from stakeholders.

Wherever data for anaerobic biodegradability were possible to obtain it has been evaluated. Less than five DID-numbers (DID 60, 128, 204) have been extended with data for anaerobic biodegradability. The reason is lack of input from stakeholders and lack of data in ECHA and other sources.

9 Updates and future revisions

The project group has received numerous questions about updating of the DID-list, both during the years since the update in 2007, and lately during the preparation of the present revision. It is a general opinion that the development in the field is very rapid. Even the revised DID-list may rapidly become outdated if no update activities are conducted.

During the 10 years since the DID-list was developed in the present form, the available resources have only enabled one update of the data. It is therefore suggested that the EU Ecolabel together with the Nordic Ecolabel consider updating the DID-list continuously. The EUEB and the European Commission are asked to consider other means of financing of the upkeep of the DID-list.

Revisions of the DID-list are different from other updates. In this revision we were looking at the framework of the DID-list including the parameters and calculation methods. It makes sense to undergo such revisions only when major changes have been made to the European Union chemical policy, registration and classification.

10 References

Biology on-line, www.biology-online.org (March 13th 2012)

COMMISSION OF THE EUROPEAN COMMUNITIES, Brussels, 26.5.2009 COM(2009) 230 final: 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

EU Ecolabel, www.euecolabel.eu

GHS, http://ec.europa.eu/enterprise/sectors/chemicals/classification/index_en.htm (March 13th 2012)

Klimisch H., Andreae M. and Tillmann U. (1997) - A systematic approach for evaluating the quality of experimental toxicological and ecotoxicological data. Regul Toxicol Pharm, 25, 1-5.

Nordic Ecolabel, http://www.nordic-ecolabel.org/

TGD, *Technical Guidance Document on Risk Assessment part III*, Commission Directive 93/67/EEC, http://ihcp.jrc.ec.europa.eu/our_activities/health-env/risk_assessment_of_Biocides/doc/tgd/tgdpart3_2ed.pdf (March 13th 2012)

ECHA, http://www.echa.europa.eu/web/guest/information-on-chemicals/registered-substances

Toxicity web sites:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
http://www.toxnet.nlm.nih.gov/

More links are available at pp 85,
http://echa.europa.eu/documents/10162/17224/information_requirements_r7b_en.pdf

REACH Guidance documents,
http://echa.europa.eu/documents/10162/17224/information_requirements_r7b_en.pdf
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http://www.echa.europa.eu/documents/10162/17217/clp_en.pdf

Appendix 1

Collection of input on the DID-list of 2007

Questions and answers

Question 1: Where in the DID-list do you see the biggest potential for improving? What areas and what DID-numbers?

Updates and new entries are needed and several stakeholders ask for an update on entries based on the latest available data e.g. from REACH not only with improved safety information but following the new names and identification paths used in REACH dossiers, the REACH structure and the way substances are handled under REACH should be applied. At the same time it is mentioned that when this is done it may need to be referred to the data owners to use the data. One stakeholder mentions that it is difficult to assess the age, scope and status of the underlying information e.g. its quality.

It can be quite difficult for people outside environmental labelling to grasp the purpose of the list and how it´s supposed to be used.

It is mentioned that it is sometimes difficult to assess if the set DID-number is correctly related to the substance, especially with surfactants. There is need for some explanation of some of the substances entries/names, perhaps with some substance names and even with some specific examples.

It is suggested that the DID-list should include INCI (International Nomenclature for Cosmetic Ingredients) names for consistency with Detergents Regulation labelling requirements but also EC, index or REACH-number is suggested to be used as identifier instead of CAS. But adding CAS-numbers is also suggested. It is also suggested that data from the Biocidal Product Directive should be used, taking into account the quality of the data published.

A few stakeholders stress that the DID-list of 2007 is not in line with how toxicological and eco-toxicological information will be shared in the future. The REACH legislation will generate more data for a majority of substances. The data will be produced continuously on different websites in safety data sheets and other documents. The DID-list will always be one step behind the current knowledge on toxicology in the current system, partly because it is a physical document and difficult to update. If the DID-list should continue to exist, it needs to be updated frequently following the work done within REACH and also reflecting new substances that are introduced. Other stakeholders suggests that it should be possible to use own documentation since new data we be available quicker than the list will be updated and that confidential company specific entries under trade names (per company, per product name) should be possible to avoid "free-riding of data".

It is also said that the present DID-list does not provide information on the chemicals risks in the environment asking for a reintroduction of the elimination factor (DID-list before 2004), and that the safety factors above 1000 represented over-conservatism.

Several stakeholders would like a remark on the list if the ingredient is now allowed to be used.

There is suggested that no anaerobic biodegradation data should be needed for substances which are readily biodegradable under aerobic conditions. The DID-list should recognize the scientific opinion of the EU SCHER Committee that "the requirement for ready ultimate biodegradability under anaerobic conditions is not by itself considered an effective measure for environmental protection". In other words: "If a surfactant is rapidly degradable under aerobic conditions and presence in anaerobic compartments does not affect function and structure, then anaerobic biodegradability is of minor importance".

One stakeholder mentions that it would be nice if substances, other than detergents, could be exempted from the requirement on anaerobic biodegradability if the substance is not toxic for aquatic organisms (E/LC50 > 10 mg/l), is readily aerobically degradable and has a log Pow < 4, and that this is indicated in the DID-list.

Another stakeholder would recommend differentiating between substances that have not been tested and substances that partly fulfilled the criteria and substances that fulfilled the criteria by using a multiplication factor. The differentiation in anaerobic degradation would ensure that companies would have an interest in testing their substances and that additional data will be provided in the future.

It is also suggested that all substances which are covered by HERA-Project should be critically reviewed and maybe added since a lot of producers refer to it.

CESIO has established a classification and labelling recommendation with clusters for surfactant products groups, i.e. ethoxylated alcohols. It would be desirable to match this list with entries of the DID-list in order to have a common view on the toxicity of the ethoxylated alcohols.

The entries for perfumes and colorants should be split up, indicating that no data exists on specific perfumes and colorants.

Question 2: Are there DID numbers where you have data showing that the listed information is not correct?

Certain DID-numbers are pinpointed as necessary to update, as follows:

DID-nr	Regarding
5, 6	The TF acute of C12/18 AS (DID-list #6) is 0.0149. This is much higher than the TF value of 0.0028 for C12/14 AS (DID-list #5). As C12/18 contains C16 and C18

	homologues the C12/18 material is more toxic than the C12/14 AS.
8, 9	C16/18 3-4EO Sulphate (DID #9) has significantly lower TFs than C12/15 1-3EO sulphate (DID #8), when is reality these should be close or at least within one order of magnitude at the very least.
15, 123	The TF values for Soap (DID-list #15) are much less toxic than those for fatty acids (DID-list 123), when in fact these should be close or the same number. Also, Fatty acids are currently assigned a TF values which makes them more toxic than most surfactants, which is not correct.
22, 23	The C9/11 5-11 EO multibranched (DID #23) should be less toxic than the predominantly linear C9/11 6-10 EO (DID#22) as branching reduces toxicity.
23	Also, the C9/11 5-11 EO multibranched (DID #23) should be less toxic than the C12/15 3-12 EO multibranched as these have comparable branching and numbers of EO but the C12/15 alkyl chain length is more toxic than the C9/11.
25, 28, 29, 30, 31	The C12/15 12-20 EO (DID # 31) has a much lower TF chronic than the 2-6 (# 25), 6-9 (#'s 28 or 29) and 9-12 (# 30), when it will be less toxic.
35	anaerobic biodegradability
35, 36	DID-list #'s 35 and 36 (C12/18 5-10 EO; C12/18 10-20) have the same TF values. When in reality the C12/18 10-20 EO will be less toxic than the C12/18 5-10 EO.
37, 39	For the C16/18 chain length EOs the TF chronic of the 2-8 (DID # 37) and 20-30 (DID # 39) ranges are comparable. The 20-30 range should be less toxic.
38, 39	The C16/18 20-30EO (DID #39) has much lower TFs than C16/18 9-18 EO (DID #38) when in reality it is the lower Eos which would be more toxic.
38, 40	Similarly, the C16/18 9-18 (DID # 38) and >30 (DID # 40) EO ranges have a comparable TF chronic. The >30 EO range should be less toxic.
40	No specific comment
47/49	Actually is 47 covered by 49, but the chain length in 49 is somewhat strange. Should there be one or more separate groups, that are no overlap?
61	CAPB (Cocamidopropyl betaine) which has SF 100 but it should probably be SF 50 for Chronic Toxicity since it seems to be tested on two different trophic levels according to ECHA. Could have new toxicity values within the HERA Project. Environmental risk assessment not finished. The very low chronic toxicity value is disputed.

	Preservatives
89	No specific comment
90	No specific comment
95+99	Is it possible to examine anaerobic degradation? Is today treated with an exception (readily biodegradable and not bioaccumulative)
115	Citrate and Citric acid, seems to be ambiguous
128	TAED, anaerobic biodegradability
135	Urea, no specific comment
139	Cumene sulphonates, no specific comment
140	Na/Mg/K-OH, DG=0,05: biodegradability is not relevant
148	Iminodisuccinat, no specific comment
196	Block polymers**,** there should be more options.
204	anaerobic biodegradability

Also groups of substances need to be looked into, such as:

- Ethoxylated alcohols and the solvents.
- Data on anaerobic biodegradation (especially for surfactants).
- More data in the DID-list for the preservatives and cosmetic additives are requested.
- Cationic and amphoteric surfactants as well as other ingredients such as solvents and glycol ethers.
- Emulsifiers, pearlescent agents, UV filters and other substances that may occur in shampoo.
- The list of preservatives is very short as well. There is also a trend towards using "preservative-like" substances in cosmetics. These substances are not listed as preservatives under the cosmetics directive, but have such properties. Their environmental profile is much better than regular preservatives, why their use should be promoted in ecolabelled products. However, there might be a grey-zone concerning whether they need to be assessed in the cosmetics directive as preservatives. But the DID-list could add them as "Other ingredients".

Question 3: Are there groups of for example surfactants that you think should be divided into more DID-nr? I.e. do the DID-numbers cover too many different substances with different environmental effects? If, yes please indicate what DID-numbers.

The following DID-numbers and substances were mentioned:

DID-nr	Regarding
10	Dialkylsulfosuccinat, the chain length is not stated. Does it mean that the data is representative for al chain lengths or should it be specified what chain lengths that are covered?
21	"C 9/11 A, >3-6 EO predominantly linear" – is it from 4-6 EO? How flexible is "predominantly"?
34/35	DID-nr. 34/35, what about the one with 4 EO? Does it have other data or should it be included in one of those numbers?
49	"C 8/16 or C12-14 Alkyl polyglycoside" – C12-14 is it just

	a part of C8/16? or is it a difference between ”/” and ”-”?
110	No comment
111	What paraffin’s are covered? There are differences in properties depending on chain length, purity and so on.
116	No comment
123	Fatty acids, is the definition explicit and is the data covering all types of fatty acids with chain length over 14?
15/123/140	Fatty acids (DID-nr. 123) and Na/Mg/KOH (DID-nr. 140) are sometimes put together into a product and as a result soap is generated in situ. We are not sure how this could be reflected by the DID-list but we have to be aware of that. In this case we advise the applicant to use DID-nr.15 (soap) for the resulting surfactant according to the chemical equation.
124	Silicates
129	C1-C4 alcohols.
137/138	There is literature data indicating that readily biodegradability does not stop by MW = 4000. It needs to be examined if the distinction between those DID-numbers is correct.
144	Starch

- Alkylethoxylates are often used. They vary a lot in their environmental behaviour depending on the length of the alkyl- and EO-chains.
- Surfactant group of alcohol ethoxylates could be grouped according to CESIO C&L recommendation. CESIO (a CEFIC Sector Group of the European surfactant manufacturers) has clustered surfactants in relation to their classification and labelling (“CESIO-List”), which is scientifically sound and detailed; it could be a good basis for amending the DID-list.
- Generally a more flexible use of the DID numbers. Could DID 137 for instance be used for PEG-100 Stearate (despite the stearate)?
- Consider if any more substance groups should be marked with (**) (i.e. toxicity data submitted by the licence applicant shall be used to calculate the TF and determine the degradability).
- As a consequence of applying the REACH structure, there will be a grouping of chemicals, resulting in a reduction in the numbers on the DID-list. In particular for the group non-ionic surfactants this will become apparent.
- It should now be possible to split up the fragrances and give data on specific perfumes.

Question 4: Which new substances are the most important to add to the list (please argument for new substances thoroughly i.e. commonly used/tonnage, where there is data available and in which kind of chemical-technical product these substances normally are used)? Please state chemical names and if possible CAS-number.

A general comment is that a number of substances may exist which should be included. This should be discussed in a joint working group/needs further discussion

Proposed new entries to the DID-list		
DID-nr	Substance	Comments
N.a.	Dequest PB (CMI)	
N.a.	N-(3-Aminopropyl)-N-dodecylpropan-1,3-diamin; CAS 2372-82-9	
N.a.	Bronopol, (2-bromo-2-nitropropane-1,3-diol, CAS 52-51-7, EINECS 200-143-0) Potassium Sorbate, CAS: 24634-61-5, EINECS: 246-376-1,	
	BIT/MIT CAS 2634-33-6 and CAS 2682-20-4	
N.a.	Several polymers e.g. styrene-acrylate copolymers	
N.a.	GLDA (glutamic acid,N,N-di acetic acid sodium salt use: chelating agent CAS 51981-21-6)	
N.a.	Quaternary ammonium compounds	
N.a.	PAP, (Phtalimidohexanoic acid) used as a bleaching agent, CAS: 4443-26-9)	
N.a.	Sorbitan sesquioctanoate (CAS: 91844-53-0)	
N.a.	Ammonia	
N.a.	But-2-one (or methyl ethyl ketone or MEK) CAS: 78-93-3	
N.a.	N-(3-Aminopropyl)-N-dodecylpropan-1,3-diamin; CAS 2372-82-9	
N.a.	Polymeric surfactants	
N.a.	New solvents for use in car and industrial cleaning products	
N.a.	Enzymes/proteins	
N.a.	Block polymers and other polymers (used e.g. in waxes)	
N.a.	Starch / Polysaccharides based products	
N.a.	Substances in hair care products	
N.a.	Ecolabel-compatible substances listed in annexes 3,4,5 and 6 in the Cosmetics Directive	
N.a.	Acids used in cosmetics	
N.a.	Hydrogen peroxide	
N.a.	Dyestuffs	
N.a.	Some additives and/or natural ingredients such as Panthenol (81-13-0, 201-327-3), Allantoin 97-59-6, 202-592-8, Aloe Vera (Aloe Barbadensis Leaf Juice, 85507-69-3, 287-390-8), Mentha (Mentha Arvensis Leaf Oil, 68917-18-0, 290-058-5), etc	
N.a.	Ingredients for cosmetics, some acids and hydrogen peroxide, popular	

	dyestuffs, long chained alcohols, -diglycols (DID 169-181), glycol monostearate, plant extracts, several natural common oils in addition to Tall oil (182), polymers (thickeners), different fats, oils, extracts, UV-filters, emollients, alcohol denaturants	
N.a.	Fats, oils	
N.a.	UV-filters	
N.a.	Emollients used in cosmetics	
N.a.	Extracts used in cosmetics	
Propositions regarding already existing DID-list entries		
DID-nr	Substance	Comments
20-53	New non-ionic surfactants	
60, 61, 62	New amphoteric surfactants	
70, 71	New cationic surfactants	
169-181	More long chained alcohols and diglycols	
182	More common natural oils in addition to Tall oil	
113	Tributoxyethylphosphate (TBEP), CAS: 78-51-3	Is already covered by a DID-number
144	Starch	Is already covered by a DID-number
123	Fatty acids	Are already covered by a DID-number
204	Methylglycinediacetic acid, Na3MGDA	Is already covered by a DID-number, data will be updated

Question 5: Do you see a problem in adding CAS-numbers or EC-numbers as a compliment to the list (and please explain your answer)?

According to the answers we have received so far the stakeholders are mainly positive in adding CAS-numbers since it allows easier retrieval of DID-list data for substances, it will ease the identification of products ("it helps to clarify what substance we are talking about"), and facilitates linking with REACH. A.I.S.E. has already added CAS-numbers to its ESC tool.
It should though be noted that several CAS-numbers could be covered by the same DID number entry. For some of these it is therefore hardly possibly to create an exhaustive list of all CAS numbers. It is suggested that this would require a data base where you can search for substances. A pdf file like the current DID-list would not be user-friendly.
A few answers also points out that adding CAS-/EC-numbers should stay indicatively, because sometimes one substance has more than one CAS-/EC number.

Those who are negative to adding CAS-/EC-numbers mean that CAS numbers do not identify in all cases substances, especially in cases of polymeric substances. 1. Polymers can be subsumed under different CAS-numbers and 2. Within a CAS-number the product effect changes, e.g. different classification and labelling. CAS-numbers may ease the identification/alignment of substances with REACH information. One stakeholder suggests going for a 'trade name' entry listing approach for confidential chemistry or keep the current 'generic' DID entry listing approach where for a non-listed substance it is up to the supplier of that substance to assess the specific DID parameter entries. As mentioned above adding CAS-numbers can be a problem since sometimes different CAS-numbers can be used for the same substance (generic CAS-numbers and more specific). Then all possible CAS-numbers should be listed which is almost impossible.

Question 6: Do you have comments regarding the parameters in the list; SF, TF, DF? Please comment on the parameters for the list as such and also comment on the parameters for specific DID-numbers.

Many of the stakeholder's didn´t have any opinion regarding this question but those few who did either said that the parameters are fairly relevant or stressed that these concepts should align with the REACH definitions.
Comments regarding SF:

- We propose to align with REACH definition, e.g. use of the safety factors.
- For acute toxicity are too high, e. g.:
  Case 1: If chronic data (NOEC) also available → values of derived TF(acute) are in most cases much lower than TF(chronic)
  Case 2: If chronic data (NOEC) are not available → values of derived TF(chronic) are unrealistically low (e.g. DID nr. 9 or 13)
- About the acute toxicity parameter we do not understand LC50/EC50. As presented we cannot know whether the result refers to LC50 or EC50. This data should be split into two columns.
- Data on fish will be cut out soon. Chemicals are being punished with SF= 5 000 or 10 000 because of this.
- A max SF=1000 should be employed. This is a protective factor designed to ensure that substances with a potential adverse effect on environment are identified in the hazard assessment.

Comments regarding DF:

- Some substances are very reactive and a lower DF could be relevant for these. It should be made as an expert judgement confirming a very short life time i.e. it should be an exception applying to certain substances like sodium-hypochlorite or enzymes (just to name a few examples)
- Abiotic elimination of substances by waste water treatment should be considered, e.g. adsorption onto sludge. It can be realized by combination of biodegradability and the octanol/water partition coefficient (log POW) for derivation of DF.
- Why do compounds like DID 113, 122, 127 can have DF 0,15 when the test results say NA.

Question 7: Do you see a need for adding the bioaccumulation factor to the organic substances on the list? If yes, explain.

Some of the answers are positive to adding the bioaccumulation factor to organic substances to the list. One reason is that this would be an advantage to the preservative information. It would be valuable in the selection of raw materials from the list (even though it is not needed for the CDV-calculation). When data of anaerobic biodegradation is missing, bioaccumulation factor is often needed for organic substances. In this way, BCF or log P values would be easier to find if it were available on the DID-list. One other reason to have it on the list is that it is relevant for aquatic organisms, such as fish. But maybe it is better to do as today when it is a topic of its own in the criteria document (and not a part or the formula for CDV). Yet another reason put forward is that the bioaccumulation factor is requested in the CLP regulation and that this data is useful in classifying the substance.
It is also mentioned that it should not be added since inclusion can only be done if solid experimental data are available and it will be very difficult to retrieve data on bioaccumulation and for most of the surfactants currently listed a bioaccumulation factor cannot be determined. A "means agent" is suggested as logPow and BCF would be useful for those specific ingredients where such data is required by the Ecolabel criteria.

Bioaccumulation data would be useful only if sewage treatment has been considered in the CDV (elimination factor).

Question 8: Do you see a need for addition of other parameters to the list?

Several of the stakeholders' have not commented this question and several have answered that they don't see a need for addition of parameters. The suggestions made are the following:

- We would propose R- and H-phrases to be added, at least for chemicals with harmonized classification (CLP, Annex VI, part 3, table 3.2), because those phrases are covered by the criteria. Then it is also clear for some substances (e.g. formaldehyde and EDTA) why they are not allowed in any kind of Ecolabelled detergent. We would prefer this instead of removing those chemicals from the list which could be an option as well.
- All parameters that there is a requirement to document in eco-label criteria's.
- REACH data is easily available after Substance registration, and can help to evaluate the whole environmental profile, including the environmental profile of LAS.
- We are open to discuss modification of parameters (e. g. DF values).
- Adding the INCI names/EC-numbers/CAS-numbers could make it easier to find the ingredients.
- Bioaccumulation is necessary in several criteria documents.
- Mammal toxicity parameters as reference values would be useful.
- Endocrine disruption. It would also be very interesting to look at the bioavailability, not only bioaccumulation.
- Log Pow and Molecular weight (possibly just an indication of >700 g/mol or <700 g/mol)

Question 9: What are your thoughts on chronic versus acute toxicity data? Do you see a need of both or would it be enough with only chronic data? Please explain how your arguments about this.

Some stakeholders argue that there is a need to continue with both. Some of the arguments are:

- A continued use of both is recommended. For highly toxic substances the aquatic organisms may already be dead before they can reproduce, also for short term exposure and in cases where the substance is rapidly biodegradable acute data are more relevant than chronic data. Then you will never find out the chronic toxicity.
- Acute data is generally more available than chronic data and should be maintained. For REACH registration chronic information is only required for substances produced in quantities above 100 tonnes. In some cases the information can be needed also for substances produced above 10 tonnes per year.
- Chronic data should be sufficient and it shows more realistic conditions; however, acute data are generally more available (Acute Toxicity Data have become more available thanks to REACH, since it is part of basic data requirement according to Annex VII for Registration), acute data should at least be maintained for substances where no chronic data is available and it can help to complete the ecotoxicological profile. What is also very important is the flexibility to overwrite acute ecotoxicity data by higher tier data, if available.
- A TF should be generated based on available data. Available data should include both acute and chronic toxicity data. Therefore there should only be one TF for each substance. In general the rule should be that if there is a valid chronic endpoint this data should be applied instead of the acute data.
- If a substance is not on the DID-list the applicant has to calculate the TF himself. In many cases, there are only acute aquatic toxicity values available on the SDS. The resulting TF-value will be TF acute (DID-list part B). Hence, there is a need for acute data also for the rest of the substances (DID-list part A), in order to calculate TF acute for the entire product.
- Both acute and chronic should be kept in the table as in EU Ecolabel we are obliged to use chronic, while for Nordic Ecolabel both can be used
- Yes we see a need of both as long as both toxicity data may be used when calculating CDV-values of a product.

A few stakeholders are of that opinion only chronic data should be used. as "chronic data is probably more relevant as packaging size, volumes and use of the products for most product groups makes acute ecotoxicological effects highly unlikely." and "Generally, data on chronic toxicity are sufficient. For substances for which data on chronic toxicity are not yet available realistic safety factors need to be established."

Question 10: Do you have additional data to supply us with that is not listed in the REACH dossiers concerning your raw materials? Anaerobic degradation?

Most stakeholders have not answered this question, some have answered no. A.I.S.E. and CESIO are active in the area of anaerobic degradation and would be willing to discuss how such data might be made available. ERASM is working on an additional method to test anaerobic biodegradation for surfactant. These results could be also used for ecolabel assessment.

Cationic polymers are not covered by REACH and data is available from the chemical industry.

Question 11: Would you recommend an expansion of the toxicity data to include tests of other organisms (e.g. microorganisms/bacteria/ fungi/nematodes/fish eggs etc)?

Several stakeholders have chosen not to comment this question, a few has answer "no". Some have answered that the present test organisms is sufficient and they don't see any need to expand the set of currently used toxicity data and that it´s good to keep the list is as simple as possible, without too many parameters. Others argue that data should be based wherever possible on officially recognised, standard tests, and as a general principle test methods should be in line with EU Test Methods Regulations and OECD guidelines. An OECD method to test toxicity on fish eggs (Zebra Fish Embryo Test) is under development. It should be allowed in the future as an alternative to the acute fish toxicity test.

Question 12: Do you know of any surfactants/polymers on the DID-list of 2007 that do not have data reported to REACH?

Polymers are exempted from registration under REACH, thus no data reported to REACH. Many of these however, have probably completed HERA Risk Assessments (www.heraproject.com) as has LAS. E.g. all surfactants that contain an ethylene oxide/propylene oxide moiety with an average polymerisation degree above 2.5 are exempted from registration.

Some relevant substances for cleaning products e.g. some fatty acid derivatives are exempt from registration for REACH under Annex IV/V of the REACH regulation.

Most non-polymeric surfactants are in the high tonnage ranges and are therefore expected to have been registered in 2010, or in 2013 at the latest. In addition, data for low tonnage substances will be registered under REACH only in 2013 or 2018. Data for substances that will be registered in 2013 or 2018 are not reported to REACH

Appendix 2

Required test conditions

- Choice of test methods: As a general rule the internationally standardized OECD or ISO test methods are preferred. Some other standardized methods are accepted, on a case-by-case basis.
- Test duration: As a general rule only toxicity results with the designated test duration are accepted. Examples are: Acute toxicity for crustaceans: 48 h; and acute toxicity for fish: 96 h. Algae tests with 72 h and those with 96 h are both accepted. However, in algae tests, other factors, and in particular the endpoint which the EC_{50} refers to, are more important than slight deviations in exposure time. Tests with shorter test duration than 72 h may in some cases be accepted but tests with much longer test duration than 96 h are not accepted.
- GLP: As a general rule tests done in recent years after 1995 must be done in a laboratory that conforms to GLP Guidelines. If this is not the case a full test report is required.
- Results: Ideally the test result should be given as one number. If the result of a toxicity test is given as a range (bounded or unbounded) the reason for this should be indicated. E.g.: range of results from repeated tests or uncertainty in determination of LC_{50}. The result of a biodegradability test should be given as the percentage biodegradation of the theoretical maximum and not only by use of general indications like, e.g., >60% or >70%.

Required information

- Test substance: The chemical identity of the test substance must be adequately described by chemical name and average lengths of, e.g., alkyl, ethoxylate or propoxylate chains of surfactants.
- Test method: The test method must be indicated for relatively new tests. For older tests the result must be indicated in such a way that we have strong reason to believe that one of the approved methods have been used, e.g. 96h LC_{50} for fish, 48h EC_{50} for daphnia or 72 h EC_{50} for algae, concentration of inoculum and duration of biodegradability, etc.
- Test duration: As a general rule the test duration must be given. If it is stated that a standard method has been used and the submitter of the data knows that the test duration is as specified in the test protocol it is not absolutely necessary to specify the test duration.
- Reference: The data must be traceable. Hence a reference to the source of the test result is needed. The reference must be specific enough to enable us to find the original data source.
- Test laboratory: As a general rule the test laboratory must be named. Exceptions are made if the name of the test laboratory can be found in the reference.

Appendix 3

Minutes from June 12th 2012

AHWG meeting: DID-list revision

Welcome

By Marianne B. Eskeland (MBE)

MBE presented the organization of the project. The DID-list is a joint project between EU Ecolabelling and the Nordic Ecolabelling. All representatives in the project group are from the Nordic Ecolabelling.

All present introduced themselves (see attached participation list).

Presentation of the present DID-list

By Marianne B. Eskeland

MBE presented the history of the present DID-list and the parameters in the present DID-list: Acute and chronic toxicity, aerobic and anaerobic degradation, safety factor, toxicity factor, degradation factor.

It is important to note that the main purpose of the DID-list is to provide a ranking of the chemicals, comparing groups of substances with each other on specific parameters. It is not a complete list of all substances and we hope to improve the data and to retrieve the best data available. The framework of the DID-list shall provide an equal evaluation of all the substances presented. The list is made only for ecolabelling purposes, and the data should not be used for regulatory purposes.

Question: From where did you get the background information that is behind the data in the DID-list today?

Answer from project group: The background data is partly from the literature and partly from the industry. The data behind the DID-list version 2004 and 2007 is kept in a confidential database in Norway, and only used for the DID-list. Data was evaluated by two independent toxicologists, Torben Madsen, Denmark and Torstein Källqvist, Norway. For some substances the data in the old DID-list (1994) were accepted by the toxicologists without detailed background information on the testing conditions.

A question was raised about how the list was in connection to the EU Ecolabel Regulation, especially article 6.
MBE explained that the DID-list present a lot of chemicals that are not accepted in the criteria-documents. This is done as a service to the detergent producers. If they are using one of these substances in their detergent, they can easily compare and find better environmental alternatives.

In this revision we wish to update the DID-list mainly on the basis of published data from ECHA and also additional data from the industry. All data from the industry will be kept confidential

by Nordic Ecolabelling. If no updated test-results are sent in, the present data will be used in the revised DID-list, unless the toxicologists prove that errors have been made.

The parameters on the future DID-list

Toxicity

By Marianne B. Eskeland

MBE referred to the text about toxicity in the "Draft report about the DID-list revision" send out before the meeting, and presented some questions that should be discussed on the meeting.

Tox data:

Mr. Wind from Henkel/ rep. Cosmetic Europe mentioned that polymers that are not relevant for REACH registration are often not tested for tox at low concentrations, since the Tests were designed to be used for the proof of a hazard-phrase, e.g. according to the CLP-system. The indication "no hazard classification and labelling" is sufficiently answered by a limit test at 100 mg/l for a limited number of trophic levels resulting in EC59>>limit concentration. Applying the assessment factors 5 000 – 10 000 means that such polymers are penalized to be highly toxic, which they may not be in reality. Examples were provided for starch (DID nr 144) and CMC (DID no 132). Such indications should be considered in the DID-list assessment by expert judgement as "non-hazardous" substances appropriately.

The project group welcomes this information, but need more specific information referring to the DID-list numbers and name of the substances. The project group emphasizes that knowledge about errors or not accurate information in todays DID-list data must be sent as soon as possible, with a scientific argumentation, to the project group, so they can take investigate it further during the revision.

Safety factor (SF):

Several participants criticized the SF factor of 5 000 and 10 000 because they are extensions of the factors for the freshwater aquatic compartment given in the guidance document on information requirements and chemical safety assessment (R10) in REACH only found in the DID-list, and therefore not grounded in the regulations. They did not believe that these high SFs was in proportion with the safety that they should give to the information about the toxicity of a substance.

It was suggested to only stick to the levels in guidelines for REACH, meaning max 1000, when not relating to the marine environment, regardless of the amount of trophic levels that has been tested. However the project group emphasized that, as long as there still are substances with very small amount of tox data which only have been tested for acute tox on one trophic level, there is a need to distinguish between these and other substances where the toxicity factors are based on more solid grounds. For now, a safety factor above 1000 is the best way the toxicologists have found to obtain this. But the project group is of course grateful to receive other possible solutions to this problem.

It is widely accepted by scientists that chronic toxicity data are more relevant than acute tox for detergent ingredients. The detergents are released continuously into the environment, and the species are affected by a low concentration of the substances at any time. Therefore, the aim of the present DID-list was to increase the safety factors in order to encourage an increase in chronic toxicity testing.

The project group also argued that it is important to have some kind of differentiation between substances where the data information (i.e. increased validity in data representing the actual substance impact on the environment) is high compared to where there is a lack in trophic level testing. However, it is not in the interest of the Ecolabel to punish any substances by giving high SF factors, if data is available, and this is one of the main reasons for the whole revision: To update the existing list with more data, to eliminate high SF factor.

The industry mentioned that it is not likely that the amount of chronic tox data will increase in the lower tonnage substances, where it is not required by REACH. This is further emphasized by the CLP-regulation, which, from January 2013, will “punish” substances with low chronic toxicity, by labelling them “Dangerous for the environment”, regardless of their degradability.

Industry also argued that the amount of new tests on fish, will not be that high, due to the rules for new tox-test in REACH: For high tonnage substances (over 100 ton) the producers should ask ECHA if it is necessary to produce fish tox data, and only if ECHA finds a need, the test should be performed. For low tonnage substances (below 100 ton) fish test is not required if they do not exist already.

There was a short dialog about the alternatives to acute fish-tox, like fish egg test (OECD draft 157). Mr. Wind from Henkel/Cosmetics Europe explained that this method is not yet approved, since the standardization procedure under OECD is not yet finished. No one at the meeting knew when that should be finished, but it was suggested to ask OECD.

Mr. Wind from Henkel/ rep. Cosmetic Europe suggested that, if there were tox data for algae, the two other trophic levels was not necessary, and SF could be set to 1000. This due to the fact that algae is most often regarded the most sensible species. However there were other participants from the industry that did not support this, and had examples where that rule could not be followed.

The project group invites the participants to suggest how to handle tox data differently, concerning SF, however still assuring that the tox factor helps to reflect the security in the tox-data. The suggestions mentioned on the meeting (se above) will of course be part of the considerations by the ecotoxicologists in the project group, but suggestions send in writing after the meeting is also welcome (timeframe for comments see below “Summing up”)

Data collection and corporation with the industry

Until now the best solution the group have found is to have focus on finding more tox-info on those substances in the DID-list, where SF is 5 000 and 10 000. And this is where the industry becomes very important! The more information we get the more can be updated.

It was suggested to create a mailing list of industry participants and industry interest parts that the project group eco-toxicologist could use to have a continuous dialog with concerning need

of more data, during the data collection part of the revision. The list will be based on the participation-list for this meeting, and the participants are asked to spread the information if other parties are needed.

Industry participants suggested also to use data from HERA assessments apart from information from ECHA, and from the report 91-ECETOC. In 2004 and 2007, the published HERA-reports where of course used, and if there are new assessments published since then, the project-group welcome these. Mr. Wind from Henkel/rep. Cosmetics Europe would be so kind to send the report to the project group.

Mr. Luijkx from Unilever/rep. AISE explained that AISE had already looked in to the quality of the ECHA data, and had developed a chemical list based on this, when they updated their Charter for Sustainable Cleaning to the 2010 version, the ESC tool. They offered to share the experience from this evaluation of ECHA data. The project group would very much like to see the outcome of AISEs work with developing a chemical list to the ESC tool, and would appreciate if AISE send it to us. See further down in the minutes “Quality of data”.

Mr. Bashasingh from Shell Chemicals Europe / rep. CESIO offered to share a spreadsheet CESIO have made, where they have grouped substances and given the risk/hazardous phrases for these groups of chemicals. The project group noted that the spreadsheet is relevant input to the update of the DID list concerning alternative grouping of the existing DID-list numbers. However, unless the background data for the rest of the info in the spreadsheet is provided, it is not possible for the project group to use it further.

Mr. Bashasingh from Shell Chemicals Europe / rep. CESIO would send a copy of the spreadsheet and return to the members and ask for their willingness to share data with the DID-list project group.

Biodegradation

By Hanna Korhonen (HK)

Degradation factor

An internal report made to Nordic Ecolabelling from 2011 suggested changing the DF factor, in order to comply with the critique, concerning the difference in level between the DF and the SF (and thereby the difference in effect of tox and degradation of a substance in CDV). One suggestion has been to base the DF factor on T½ instead of today’s approach (estimated content of the substance in the recipient after degradation). HK explained why it was decided in the project group not to change DF to be based on T½. This was supported by the meeting participants.

Several parts of the meeting participants suggested adding an extra level of DF (lower than the todays lowest level, 0.05), for substances degrading VERY fast and to a higher extend when emitted to the recipient. The project group explained that this has already been up for discussion with the external consultant, ecotoxicologists Torben Madsen from DHI Denmark, and they will look in to the possibilities in doing so. However it requires that the industry will send the project group information on substances that they believe should have a lower DF factor, together with evidence of the VERY fast degradation of the specific substances.

Removal Factor: Mr. Wind from Henkel/ rep. Cosmetics Europe mentioned that the use of the term “degradation” is not good. First of all, degradation of the inorganic substances makes not much sense since they are not degraded. Second, it is well known that other types of “removal” happen for substances, when meeting the recipient. It was suggested to add an extra column in the DID-list, called ”removal factor”, that could overrule the DF factor, if information about other types of removals is proved for certain substances.

As explained in detailed in the background-document for the revision of the DID-list in 2004 (published on the EU Ecolabel website), a “removal factor” was given in the DID-list before 2004 based on elimination in waste-water treatment plants. This was taken out because the ecolabel-schemes preferred a list based on intrinsic properties of the substances, and also because several big cities and areas were still not connected to any sewage treatment plants. It was also a problem that the then called “elimination factors” were set without transparency by an industry-group together with one toxicologist back in 1994, and no background information about this process were given to the European Commission. It was also argued that the elimination factor had little effect on the ranking of the substances within each category of substances.

However, the project group welcomes more specific suggestions on removal of substances in the recipient than degradation. Preferably, a removal factor should be based on testing. This information will be discussed in the Nordic Ecolabelling and in the EU Ecolabel in order to determine whether there is a wish to include a factor like this factor in the DID-list again.

Mr. Wind from Henkel/ rep. Cosmetics Europe explained that a German consumer test institute, Hauptausscuss Detergention (HAD) have made a HAD list, where the likelihood of phys/chem. elimination is considered in the fate assessment by means of adsorption (based on Log Kow. He suggested using this to create another DF factor/Removal factor. It will of course be of interest by the project group to look at this HAD-list, but preferably, a removal factor should be based on testing of the substances if used in calculating the CDV. And, since the DID-list is a tool for the ecolabel schemes, and the ranking of the chemicals is the priority aspect of the list, the actual criteria documents on detergent may take adsorption in waste water treatment into account. Another aspect of this discussion is the quality of the sewage sludge resulting from the waste water treatment. See more about this discussion in the interim report for the project.

Anaerobic degradability

Ecosol argued that the test OECD 311 does not reproduce any environmental condition, it is clearly stated in the scope of the method that, “the conditions of the test do not necessarily correspond to the conditions in anaerobic digesters, nor is it applicable for the assessment of anaerobic biodegradability of organic chemicals under different environmental conditions”. Ecosol declared that it is a strong mistake to use it as the sole method to assess the anaerobic biodegradability of a substance as it is described in the DID-list. Ecosol does not want to delete the test but suggests, for substances which do not pass OECD 311, to evaluate the risk assessment in the anaerobic compartments such as soil and sediment; the substances which have these studies and that show no relevant risk, can be considered environmentally friendly and can be included in the Ecolabel DID-list without any further concern.

The project group is taking the suggestion into account in the final evaluation of how to place the focus and what is possible in this revision project, including dialog with internal and external ecotoxicologists connected to the project.

It is of great interest for the project to know if the industry has test-results from OECD 307 and 308 on the detergent ingredients in use.

The age of the test-data:

There was a discussion about change in test results for the same substance, especially concerning biodegradability. It has been argued that substances that 30 years ago was tested not to be biodegradable when tested today can be biodegradable. The reason is due to use of more specific bacteria in the degradation test that can give a better result than former test.

Participants of the meeting wished that the revision should take new, positive test results on degradation in to account when revising the DID-list.

The project group is very interested in updating information in the DID-list based on new test results, showing better degradation ability, in dialog with the internal and external ecotoxicologists connected to the project. Again, the ability for the project group to do this relies on the industry to point out which degradation data in the present DID-list that is been proven better, and send in scientific documentation for this.

Bioaccumulation:

In the questionnaire send out before the AHWG meeting, several have wished to add BCF factor to the DID-list, since it would be nice to have this data information together with the tox and degradation.

The project group explained however that there is a difference between when a substance is considered bio accumulative in REACH (BCF> 2000) and CLP (>500), and the project group is in doubt which one of these to follow.

The meeting participants did not have a good reason to the difference in definition between REACH and CLP.

Mrs. Nyqvist-Kuusola from CB Finland suggested just adding the BCF number, not deciding when the substance is bioaccumulative or not.

Mr. Wind from Henkel/ rep. Cosmetics Europe suggested adding LogKow data instead of BCF, since these were easier to collect for more substances.

Mrs. Norin from BEUC/EEB asked why there in the Ecolabel criteria today only are requirements on bioaccumulation for biocides and not all substances.

MBE explained that often we have to make some exemptions for biocides from the harmful for the environment risk phrases (including R53 that also handles bioaccumulative substances) in the criteria, since they are often classified as harmful to the environment. Even though exemptions have to be done, the Ecolabel still do not want biocides that are bioaccumulative, and therefore there are requirements on bioaccumulation for biocides. Requirements on

bioaccumulation on other substances than preservatives must be discussed in the working group setting the relevant criteria.

The project group explained that if the new parameter bioaccumulation are to be put in to the DID-list, it will take up time, and the resources to the DID-list revision is limited. The project group therefore suggests not adding the parameter in this revision.

Meeting participants did not object to this.

CAS numbers:

In the questionnaire send out before the AHWG meeting, several have wished to add CAS numbers and trade names to each DID-list number. At the meeting Mr. Luijkx from Unilever/ rep AISE supported this wish and argued that, if there is close dialog with the industry it would not be so much work finding these CAS numbers. He was aware that the CAS list would probably not be complete, but just having a relatively covering list would be helpful for the applicants.

Mr. Buttner from CB Germany supported the suggestion, adding that a lot of the CBs has very little experience in handling applications, and hence difficulty in identifying a substance to a number on the DID-list.

The project group understands the great desire to add CAS numbers to the DID-list. However this will take time from the limited amount of resources in the project. And it will be very difficult to get the CAS number list complete, which must be very clear for that part of the list. Another obstacle that has to be considered in this could is the lack of continuous update of the DID-list.

If it is possible to add CAS numbers without using large amount of resources in the project, the project group will do so. Adding CAS numbers is far more likely to be done if the industry helps collecting the information, for instance by making a list of known CAS numbers for each DID-list number and send it to the project group.

Mr. Bashasingh from Shell Chemicals Europe / rep. CESIO suggested using EC-numbers instead of CAS numbers. The project group argued that substances in ecolabelled products was also from suppliers from outside Europe, and therefore the International CAS number system is a better suggestion than the European EC number system.

Substances and data

By Lena Axelsson (LA)

New Substances for the list

In the questionnaire send out before the AHWG meeting, several suggestions for expanding the DID-list with new substances came in. LA presented the stakeholders suggestions on which substances where the data should be updated. After that, LA presented suggestions on how to prioritize substances to revise/add to the DID-list in this revision, if possible.

There were no extra comments on this by meeting participants.

Data Collection

In this revision of the DID-list, the project group hopes to get new data from ECHA. However, industry most certainly have more detailed data and perhaps also other data than published by ECHA, and the project want to establish close relations to the industry in order to improve the DID-list as much as possible. In particular, this is important for parameters not published or required by ECHA (anaerobic degradation, chronic toxicity) and for substances that are not covered by REACH (like polymers and low tonnage chemicals). Obviously, the quality of the revised DID-list depends on our ability to collect new data from the industry and ECHA, and we are glad to see a very positive attitude in the chemical industry for cooperation in this matter.

Quality of data

Mr. Luijkx from Unilever/ rep AISE noted that an evaluation of the quality of the data in ECHA was necessary. The project group is aware of this, and have set up a framework for what data quality is accepted to be used in the DID-list revision. Both internal and external toxicologist in the project has agreed on this, and they are written in the background report.

Timeframes

In May 2013 there is a new deadline for sending in data to ECHA. These new data would also be relevant to use in this DID-list revision. This is why the project group is working on getting an approval from the European Commission of expanding the timeframe of the DID-list project with ½ year.

Meeting participants supported this. Some participants argued that it takes several months from deadline to when ECHA publishes the data. The project group is aware of that, and this is why they hope to get an agreement with the industry, that, when sending data to ECHA, they also send information directly to us.

Summing up

Forth coming work:

During summer, the project grope would be very happy to get all the input on improving suggestions to the existing DID-list that was not already send as part of the questionnaire. The more specific the suggestions for improvement are the better. These can then be taken into account together with the input from this meeting and results from the questionnaire, in the final evaluation report for the DID-list, clearly explaining what will be the focus points in the rest of the revision process. This report must be finished in August. After this, the project goes into a data collection phase.

Minutes and presentations from this meeting will be send first to the meeting participants and then to all interested parties on the mailing list for the DID-list revision. Comments on the minutes are very welcome.

Any Other Business:

Mr. Luijkx from Unilever/ rep AISE noted that the tox value in the DID-list for fragrances is not in accordance with what is required through environmental-hazardous phrases for perfumes. Mr. Luijkx will send some written comments on this to the project group.

The project group can mention that all data send from the producers/suppliers will be kept confidential. If CESIO members or others with data whish more assurance on the project groups confidentiality, this can be arranged with the project group.

Participation list:

Name	**Organization/Company**	**Representing**
Hanna Korhonen	Ecolabelling Finland	Project group
Lena Axelsson	Ecolabelling Sweden/Nordic Ecolabelling	Project group
Karen D Jensen	Nordic Ecolabelling	Nordic Ecolabelling
Gerard Luijkx	Unilever	AISE
Laura Portugal	AISE	
Anand Bachasingh	Shell Chemicals Europe BV	CESIO
Franziska K Birkved	Novozymes	
Lukasz Wozniacki	BEUC/EEB	
Helena Norin	Enviroplanning	BEUC/EEB expert
Manuela Coroanea	Cosmetics Europe	
Thorsten Wind	Henkel	Cosmetics Europe
Natalie Schaepen	Proctor & Gamble	AISE
Jørgen Gade Hyldgaard	Hylgaarde Aps	
Thomas Demacker	ThermPhos	
Ulrica Nordberg	Akzo Nobel Surface Chemistry AB	
Juan Antonio de Ferrer Daroca	Cepsa Quimica S.A.	ECOSOL, CESIO
Giorgio Cassotni	ECOSOL	
Peter Buttner	RAL	CB Germany

Appendix 4

Stakeholders

At the start of the revision project several potential stakeholders were contacted. In addition to the industry stakeholders in Table 1, all Member States, Competent Bodies and other members of EUEB got detailed information on the project, and were invited to fill in the questionnaire in Appendix 1. Several of the stakeholders have provided test-data to the DID-list.

The stakeholders were also invited to sign up as registered stakeholders. These interested parties, Table 2, together with EUEB have been updated continuously during the project.

Table 1 Industry stakeholders

Company	Contactperson
ACI	Earni Rosenberg
ACI	Richard Sedlak
AISE	Sylvie Lemoine
Allison	Anne Monrad Larsen
Alpha Products	Keld Winkel
BASF	Katrin Schwarz
Berner	Minna Salmela
Buck Chemie	Matthias Fritz
Cederroth	Hanna Björnström
Cehtech	Lars Hendriksen
Cleano Production AB	Sofia Bäckman
Colgate-Palmolive	Rita Skånstrøm
Dalli de Klok	Henk Blonk
Danlind	Henrik Moeller Joergensen
Dermapharm	Connie Mørch
DHI	Tina Slothuus
DHI	Torben Madsen
Diversey Danmark	Ina Rasmussen
Diversey Sverige AB	Johanna Löfbom
ECHA	Elina Karhu
Ecolab	Ulf Lyzell
Ecover	Kirsten Vangenechten
Eosca	Graham Payne
Finska Natrurskyddsföreningen	Eero Yrjö-Koskinen
Gipeco	Per Thorell
Hair Team Company	Jan P. Eskildsen
Iduna	Mette Borg
IIH-branschorganisation	Ulrika Flodberg
Johnson & Johnson	Margit Costabel-Farkas

Jysk Kemi Service A/S	Rikke Hunskjær
Kemianteollisuus ry (CHEMICAL INDUSTRY FEDERATION OF FINLAND)	Aimo Kastinen
Kiilto Oy	Heidi Kähkönen
KiiltoClean	Juha Issakainen
Knud E. Dan	Lars Bøgeholm
KTF-branschorganisation	Olof Holmer
Lidl Danmark	Henrik Madsen
Lilleborg AS	Line Vikersveen
Lilleborg AS	Kristine Løland Eriksen
Lilleborg AS	Roar Kraft
Macserien	Magnus Kämpe
McBride	Julie Berteloot
Mellisa Naturkosmetik	Margit Melissa Klinder
Miljöministeriet	Eeva Nurmi
Nordisk Parfumerivarefabrik A/S	Carsten Stenholt
Novadan	Anja Nielsen
Persano Group	Pernille Borling
Procter &Gamble	Aimee Goldsmith
Propack	Bianka Volkmann
Pro-ren	Lars Bo Andersen
Reckitt Benckiser (Scandinavia) A/S Bagsvaerd	Ina Andreasen
Ren Såpeindustr	Helen-Marie Heksem
Respekt Danmark	Jens Haugaard
Respo	
Sæbefabrikken	Jens Erik Hansen
Simi	Sven Ulsrod
Stockholm Vatten	Cajsa Wahlberg
Sv. Diskbolaget	Stefan Mosell
Säkerhets- och kemikalieverket TUKES	Riitta Leinonen
TeknoForest	Tomi Pohjolainen
Teknokemiska Föreningen	Sari Karjomaa
Toxminds	Thomas Petry
Tvätt-Lina	Hans Fransson
Unilever Danmark	Michael Schou
Unilever Sverige AB	Cecilia Udekwu
Victoria Scandinavian Soap	Åsa Friberg
VTK	Anne Bak
IFRA	
CEFIC	
Lilleborg	
SPT	
Dansk Industri	

Table 2 DID-list registered stakeholders

Company	Contact person
EOC Belgium NV	Geert De Lathauwer
Evonik Degussa International AG	Christian Chwalek
Lakeland Laboratories Ltd	Cath Buckley
Schülke & Mayr GmbH	Matthias Hentz
IPTS Seville	Renata Kaps
ATQ QUIMYSER	Cristina Jordán
BASF - The Chemical Company	Katrin Schwarz
Akzo Nobel Surface Chemistry AB	Ulrica Nordberg
Colgate Palmolive	Mikkel Trier Frederiksen
McBride	Marcy Vandewalle
Lambert Kristensen ApS.	Lars L. Kristensen
Cefic	Dr. Alain Bouvy
European Chemical Industry Council	
Oleochemicals & Surfactants Secretariat	
A.I.S.E.	Sylvie Lemoine
	Sophie Mathieu
Julius Holluschek GmbH	Helmut Feurstein
	Labor
Cesio	Anand Bachasingh
Novozymes	fkbi@novozymes.com
EEB/Beuc	Helena Norin
P&G	N. Schrapen
Thermophos	Thomas Demacker
Hygade	
Unilever	Gerard Luijks