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Eco-friendly SOAPS & DETERGENTS



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ENVIS Centre on:

Eco-labelling and Eco-friendly products

Foreword

Soaps and detergents occupy a lion share of the time of telecasting and even of print media. The ads keep on promising even whiter, brighter and cleaner clothes for you than what was available with the earlier versions which might be only a few months before. The time and efforts invested in selling soaps is as much as the problems that it creates to the environment and man by way of polluting the water bodies and creating various other problems like eutrophication of aquatic environments and triggering the spread of skin diseases on enormous proportions.

It appears that the obsession for looking fair and lovely and wearing whiter and brighter clothes turned into an overriding obsession and priority way back in 1500 BC. It is precisely in this year that soap was invented. It initiated with a concoction that was not too bad for the environment as it constituted a mix of animal and vegetable oils and alkaline salts. But then man's greed took over the rationale and then detergents were invented and firmly placed on the market shelves in 1946. Detergents contain a noxious blend of wetting agents and emulsifiers, based on non-soap synthetic surfactants, surface-active agents, builders and fillers, anti re-deposition agents, optical fiber brighteners, bluing agents, bleaching agents, foam regulators, organic sequestering agents, enzymes, perfumers, and substances that regulate the density and assure crispness of the material they are used on etc. etc. The list is endless and in the end tells a grim story the constituents of detergents are harmful not only to environment but also to man.

When you relate the consumption patterns of soaps and detergents of this country amounting to thousands of tons, about 7 kg/capita - to the harm caused to the environment and man, the statistics support various reports on the continually deteriorating quality of our water bodies and the rise of skin diseases. Conventional laundry detergents leave chemical residues on the clothes, which enter our bodies either through the skin or through the lungs, causing skin problems including allergies, skin infections and in rare cases, cancer. The fragrances used in laundry detergents are allergic and irritating to lungs, causing serious health effects to people with asthma or chronic heart problems. Continual and excessive exposure of the skin to detergents lead to drying, fissuring and dotting of the keratin layer leading to increased permeability that causes sensitization, which may develop into dermatitis.

Most laundry detergents are phosphate based and phosphate is a plant nutrient too. In a country like ours, where a majority of domestic wastewater either does not get treated or partially treated, the phosphates from the washing activities eventually find place in water bodies and do the damage by promoting algal blooms and thus lowering the dissolved oxygen content of the water body. This usually leads to excessive eutrophication that kills the fish, cause odor and increase pathogenic animals.

Stories doing the rounds at a London dungeon substantiate that though soaps were invented way back in 1500 BC, it gained prominence and research on the subject was placed on the fast track in 69 BC at all the places - Alexandria, Egypt. The credit of taking both the research and production in the area of soaps to the dizzy heights goes to the beautiful daughter of King Ptolemy Auletes of Egypt called Miss Cleopatra, whose obsession and reputation for being fairer, fragrant, feminine and scandalous too, led way glamorously to today's dazzling soaps both in the washrooms and on the telly.

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1. ECOMARK CRITERIA FOR SOAPS & DETERGENTS

A. TOILET SOAPS

(The Gazette of India, Extraordinary, Part II-Section 3(I), No. 188, April 28, 1992)

1. GENERAL REQUIREMENTS:

- 1.1 All toilet soaps shall meet relevant standards of Bureau of Indian Standards as amended from time to time pertaining to quality, safety and performance.
- 1.2 The manufacturers must produce the consent clearance as per the provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 respectively along with the authorisation, if required, under the Environment (Protection) Act, 1986 to BIS while applying for ECOMARK;
- 1.3 The product must display a list of critical ingredients in descending order of quantity present in per cent by weight. The list of such critical ingredients shall be identified by Bureau of Indian Standards (BIS);
- 1.4 The product packaging material shall be made from recyclable, reusable or biodegradable material;
- 1.5 The product packaging may display in brief the criteria based on which the product has been labelled Environment Friendly; and
- 1.6 The product may be accompanied by detailed instructions for proper use so as to maximise product performance and minimise wastage.

Note: The conformity to the requirement No. 1.4 the manufacturer will give the declaration with supporting data.

2. PRODUCT SPECIFIC REQUIREMENTS :

- 2.1 Product formulated or manufactured shall not contain phosphates and synthetic detergents.
- 2.2 Product shall be dermatologically safe when tested by the methods given in DOC : CHD 025(0236).

The following BIS standards have been amended incorporating the above Ecomark requirements :

1)	Is 2888 :	1983	Toilet Soap
2)	Is 4199 :	1990	Liquid Toilet Soap
3)	Is 5784 :	1970	Shaving Soap
4)	Is 10523 :	1983	Baby Toilet Soap
5)	Is 11303 :	1985	Transparent Toilet Soap
6)	Is 11479 :	1985	Antibacterial Toilet Soap

B. DETERGENTS

(The Gazette of India, Extraordinary, Part II-Section 3(i), No. 188, April 28, 1992)

1. GENERAL REQUIREMENTS :

- 1.1. All detergent formulations for house-hold and industrial use shall meet relevant standards of Bureau of Indian Standards (BIS) as amended from time to time, pertaining to quality, safety and performance as listed below :-
The manufacturers must produce the consent clearance from the concerned State Pollution Control Board as per the provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 respectively along with the authorisation, if required, under the Environment (Protection) Act, 1986 to BIS while applying for ECOMARK;
- 1.2 The product must display a list of critical ingredients in descending order of quantity present in per cent by weight. The list of such critical ingredients shall be identified by the BIS;
- 1.3 The product packaging may display in brief the criteria based on which the product has been labelled Environment Friendly;
- 1.4 The product may be accompanied by detailed instructions for proper use so as to maximise product performance and minimise wastage; and
- 1.5 The product packaging material shall be made from recyclable, reusable or biodegradable material.

Note: For conformity to this requirement, the manufacturer shall give the declaration with supporting data.

2. PRODUCT SPECIFIC REQUIREMENTS:

- 2.1 Product shall not contain phosphates. Any other substitutes may be used which shall be environment friendly.
- 2.2 The safety on use of the product shall be evaluated as per the methods given in BIS standards as amended from time to time as listed below :
 - 2.2.1 The safety evaluation pertaining to irritant potentation : according to IS 11601 (Part I)- 1990 and
 - 2.2.2 Skin sensitisation potential according to IS : 11601 (Part II)- 1991 and
- 2.3 Product shall be formulated or manufactured with readily biodegradable surfactants when tested by modified strum test as prescribed in the Indian Standard. :

The following BIS standards have been amended incorporating the above Ecomark requirements :

- | | | |
|----|------------------|---|
| 1) | IS : 4955 - 1982 | House-hold laundry detergent powders |
| 2) | IS : 4956 - 1977 | Synthetic detergents for industrial purposes |
| 3) | IS : 8180 - 1982 | Household `laundry detergent bars |
| 4) | IS : 9458 - 1980 | Synthetic detergents for washing woollen and other delicate fabrics |



C. LAUNDRY SOAPS

(The Gazette of India, Extraordinary, Part II-Section 3(i), No. 4, January 5, 1994.)

1. GENERAL REQUIREMENTS :

- 1.1. All laundry soaps shall meet relevant standards of Bureau of Indian Standards as amended from time to time pertaining to quality, safety and performance as listed below :

Note : BIS may formulate/incorporate optional standards for environment friendly characteristics.

- 1.2 The manufacturers must produce the consent clearance as per the provisions of Water (Prevention and Control of Pollution) Act, 1974, Water (Prevention & Control of Pollution) Cess Act 1977 and Air (Prevention and Control of Pollution) Act, 1981, along with the authorisation, if required, under the Environment (Protection) Act, 1986 to BIS while applying for ECOMARK.
- 1.3 The product must display a list of critical ingredients in descending order of quantity present in per cent by weight. The list of such critical ingredients shall be identified by the Bureau of Indian Standards.
- 1.4 The material used for product packaging material shall be made from recyclable, reusable or biodegradable material and the parameters evolved under the scheme of labelling environment friendly products on specific subject of packaging shall apply.
- 1.5 The product packaging may display in brief the criteria based on which the product has been labelled Environment Friendly.
- 1.6 The product may be accompanied by detailed instructions for proper use so as to maximise product performance and minimise wastage; and
- 1.7 Product formulated or manufactured shall not contain phosphates.
- 1.8 The non soapy detergent (NSD) if used in the manufacture of laundry soaps shall be readily biodegradable when tested by modified sturm test as prescribed in the Indian Standard.
- 1.9 The material shall pass the test when evaluated for irritant potential as per the method prescribed in IS 11601 (Part-1) : 1986 and skin sensitisation potential when evaluated as per the method prescribed in IS 11601 (Part-2) : 1992.

The following BIS standards have been amended incorporating the above Ecomark requirements :

- | | | |
|----|----------------|---------------------|
| 1) | IS : 285:1992 | Laundry soaps |
| 2) | IS : 2887:1992 | Laundry soap powder |

Hand Cleaners/Hand Soaps (Green Seal : USA)

This standard is jointly approved with another environmental labelling organization - Green Seal. Certification under this standard qualifies licensees to apply for use of the Green Seal mark.

Hand cleaners are designed to remove both organic and inorganic soil from skin. Industrial products are found in garages, print shops, and other industrial settings. Institutional products are found in public washrooms of restaurants, retail, schools and other public buildings. At present, the standard does not focus on the use of handcleaners in households, food preparation operations, or medical facilities.

Based on a review of currently available life cycle information, the requirements for these products will provide an environmental benefit through elimination of toxic compounds, reduced emission of air and water pollutants and improved use of resources.

Certification Criteria:

- must demonstrate performance
- must not be a skin sensitizer
- must not be a skin irritant
- restriction on package types and materials
- must not be an antimicrobial product
- must not contain phosphates, NTA*, or EDTA*
- must not contain APEOs*;
- must not contain halogenated organic solvents or butoxy-ethanol;
- must not contain volatile organic compounds in excess of 1% (institutional) & 8% (industrial)
- restrictions on fragrances
- must not contain carcinogenic compounds
- must be readily biodegradable
- must not be toxic to aquatic life

**Note : NTA stands for NITRO TRIACETIC ACID EDTA stands for ETHYLENE DIAMINE TETRA ACETIC ACID APEO stands for ALKYL PHENOL ETHOXYLATE*

All the above are toxic organic compounds hazardous to health and used in cleaning compounds.

Ref:
<http://www.environmentalchoice.com/English/ECP%20Footer/About%20the%20Program/Criteria/Cleaning%20and%20Janitorial%20Products/Cleaning%20Products/Hand%20Cleaners%20Hand%20Soaps>

Soaps And Detergents Manufacturing (USEPA information)

1. General

1.1 Soap Manufacturing

The term "soap" refers to a particular type of detergent in which the water-solubilized group is carboxylate and the positive ion is usually sodium or potassium. The largest soap market is bar soap used for personal bathing. Synthetic detergents replaced soap powders for home laundering in the late 1940s, because the carboxylate ions of the soap react with the calcium and magnesium ions in the natural hard water to form insoluble materials called lime soap. Some commercial laundries that have soft water continue to use soap powders. Metallic soaps are alkali-earth or heavy-metal long-chain carboxylates that are insoluble in water but soluble in nonaqueous solvents. They are used as additives in lubricating oils, greases, rust inhibitors, and jellied fuels.

1.2 Detergent Manufacturing

The term "synthetic detergent products" applies broadly to cleaning and laundering compounds containing surface-active (surfactant) compounds along with other ingredients. Heavy-duty powders and liquids for home and commercial laundry detergent comprise 60 to 65 percent of the U. S. soap and detergent market and were estimated at 2.6 megagrams (Mg) (2.86 million tons) in 1990.

Until the early 1970s, almost all laundry detergents sold in the U. S. were heavy-duty powders. Liquid detergents were introduced that utilized sodium citrate and sodium silicate. The liquids offered superior performance and solubility at a slightly increased cost. Heavy-duty liquids now account for 40 percent of the laundry detergents sold in the U. S., up from 15 percent in 1978. As a result, 50 percent of the spray drying facilities for laundry granule production have closed since 1970. Some current trends, including the introduction of superconcentrated powder detergents, will probably lead to an increase in spray drying operations at some facilities. Manufacturers are also developing more biodegradable surfactants from natural oils.

2. Process Descriptions

2.1 Soap

From American colonial days to the early 1940s, soap was manufactured by an alkaline hydrolysis reaction called saponification. Soap was made in

huge kettles into which fats, oils, and caustic soda were piped and heated to a brisk boil. After cooling for several days, salt was added, causing the mixture to separate into two layers with the "neat" soap on top and spent lye and water on the bottom. The soap was pumped to a closed mixing tank called a crutcher where builders, perfumes, and other ingredients were added. Builders are alkaline compounds that improve the cleaning performance of the soap. Finally, the soap was rolled into flakes, cast or milled into bars, or spray-dried into soap powder.

An important modern process (post 1940s) for making soap is the direct hydrolysis of fats by water at high temperatures. This permits fractionation of the fatty acids, which are neutralized to soap in a continuous process. Advantages for this process include close control of the soap concentration, the preparation of soaps of certain chain lengths for specific purposes, and easy recovery of glycerin, a by-product. After the soap is recovered, it is pumped to the crutcher and treated the same as the product from the kettle process.

Ref: <http://www.epa.gov/ttn/chief/ap42/ch06/final/c06s08.pdf>

2.2 Detergent

The manufacture of spray-dried detergent has 3 main processing steps: (1) slurry preparation, (2) spray drying, and (3) granule handling. The 3 major components of detergent are surfactants (to remove dirt and other unwanted materials), builders (to treat the water to improve surfactant performance), and additives to improve cleaning performance. Additives may include bleaches, bleach activators, antistatic agents, fabric softeners, optical brighteners, anti redeposition agents, and fillers.

3 Emissions And Controls

3.1 Soap

The main atmospheric pollution problem in soap manufacturing is odor. The storage and handling of liquid ingredients (including sulfonic acids and salts) and sulfates are some of the sources of this odor. Vent lines, vacuum exhausts, raw material and product storage, and waste streams are all potential odor sources. Control of these odors may be achieved by scrubbing exhaust fumes and, if necessary, incinerating the remaining volatile organic compounds (VOC). Odors emanating from the spray dryer may be controlled by scrubbing with an acid solution. Blending, mixing, drying,

packaging, and other physical operations may all involve dust emissions. The production of soap powder by spray drying is the single largest source of dust in the manufacture of synthetic detergents. Dust emissions from other finishing operations can be controlled by dry filters such as baghouses. The large sizes of the particulate from synthetic detergent drying means that high-efficiency cyclones installed in series can achieve satisfactory control. Currently, no emission factors are available for soap manufacturing. No information on hazardous air pollutants (HAP), VOCs, ozone depleters, or heavy metal emissions information were found for soap manufacturing.

3.2 Detergent

The exhaust air from detergent spray drying towers contains 2 types of air contaminants: (1) fine detergent particles and (2) organics vaporized in the higher temperature zones of the tower. Emission factors for particulates from spray drying operations are shown in Table 6.8-1. Factors are expressed in units of kilograms per megagram (kg/Mg) and pounds per ton (lb/ton) of product.

Ref: <http://www.epa.gov/ttn/chief/ap42/ch06/final/c06s08.pdf>

SHAMPOO, SOAP ETC. : AUSTRALIAN LABELLING STANDARDS.

1.0 Environmental Impact of Shampoo, Body Shampoo, Liquid and Solid Soap

This Standard is a voluntary environmental labelling standard which specifies requirements for Shampoo, Body Shampoo, Liquid and Solid Soap products. These products can potentially have a comparatively lower level of environmental load compared to similar products on the market. These products have appropriate performance characteristics making them suitable for their intended purpose.

The primary purpose of this standard is to define environmental performance criteria for Shampoo, Body Shampoo, Liquid and Solid Soap products. Requirements are imposed on the classification of substances used, on degradability and bioaccumulability, on the use of fragrances and colouring agents, on packaging and also on the efficiency of the products. The products are discharged to water after use. Accordingly, properties such as biological degradability, bioaccumulation and toxicity in aquatic environments are key considerations as regards all constituent components. This applies in particular to

surfactants, which are the most important constituents of the products in terms of quantity and function. Hence the environmental loads of such certified products compared to non certified products are reduced. Shampoo and soap come into direct contact with the skin. Accordingly, their content of skin irritants, allergens or other harmful components and pollutants should be as low as possible.

2.0 Product Category Scope

The product group in this document encompasses liquid and solid cosmetic products used primarily for cleaning/washing the skin and hair of the body which are removed with water after use.

3.0 Environmental Performance Criteria

3.1 Fitness for Purpose

Certified products should be good performers in their intended application. It is implied that certain standards of product performance are implicit in the label. Certified product must ensure that the product is fit for its intended purpose and where relevant:

- 3.1.1 The product meets the performance requirements of the relevant Australian Standard for its intended application; or
- 3.1.2 The product meets any other internationally accepted standard if it is to be exported;

3.2 Active Content

For the purpose of this document AC means the quantity (in weight) of all organic substances present in the product, excluding the water content of the components. Rubbing/abrasive agents in hand cleaning agents are not included. A calculation of Active Content shall be performed providing clear description of substances with Material Safety Data Sheets available for assessment.

3.3 Surfactants

All surfactants must be readily biodegradable. In testing readily biodegradability, test method No.301 (A to F) in OECD Guidelines for the Testing of Chemicals (ISBN 92-64-1222144) or other equivalent test methods should be used.

All surfactants must also be anaerobically biodegradable. For testing anaerobic biodegradability, ISO 11734, ECOTOC No.28 (June 1988) or equivalent test methods should be used. The requirement is a minimum of 60% degradability under anaerobic conditions.

Linear alkylsulphonates (LAS), alkylphenol ethoxylates (APEO) and alkylphenol derivatives (APD) must not be added to the product.

3.4 Aerobic non-biodegradable organics (anBDO)

The content of organic substances (surfactants are exempted) that are not readily biodegradable must not exceed the limits stated below. In testing readily biodegradability, test method No.301 (A to F) in OECD Guidelines for the Testing of Chemicals (ISBN 92-64-1222144) or other equivalent test methods should be used.

The limits also apply for products for animals. Organic rubbing/abrasive agents in hand cleaning agents shall not be counted.

Limits: Shampoo, body shampoo, liquid soap: 15 mg/g AC
Solid soap: 10 mg/g AC
Conditioner: 30 mg/g AC

3.5 Anaerobic non-biodegradable organics (anNBDO)

The content of organic substances (surfactants are exempted) that are not anaerobically biodegradable (anNBDO) must not exceed the limits stated below.

The limits also apply for products for animals. Organic rubbing/abrasive agents in hand cleaning agents are not counted in.

Limits: Shampoo, Body Shampoo, and Liquid Soap: 15 mg/g AC
Solid soap: 10 mg/g AC
Conditioner: 30 mg/g AC

All substances that are not anaerobically biodegradable will be viewed as anNBDO. For testing anaerobic biodegradability, ISO 11734, ECOTOC No.28 (June 1988) or equivalent test methods should be used.

3.6 Preservatives

Preservatives shall not be classified as or have constituent substances

1. Which are or cause concern that they are mutagenic
2. Which are known or presumed to be carcinogenic
3. Which are known or presumed to be reproductive or development toxicants
4. Which are known or presumed to be reproductive or development toxicants through lactation

or any combination thereof, according to the approved criteria for the classification of hazardous substances by the Australian National Occupational Health and Safety Commission and/or the approved criteria of the New Zealand Hazardous Substances and New Organisms Act (1996)

The following substances are considered to cause endocrine disruption in accordance with the EU list of substances causing endocrine disruption classes 1 and 2 and that are found on the INCI-list. The EU-list and the INCI-list has been reviewed and substances that are found on both lists

are found below. Since this is a flexible list, it may be extended by the addition of new substances during the period of validity of the criteria. This table will also encompass any new substances.

3.7 Complexing Agents

Nitrilotriacetate (NTA, CAS-no.139-13-9) must not be present in the product. Ethylene diamine tetra acetate (EDTA) and salts hereof (e.g. CAS-no.64-02-8) and phosphonates may be present only in solid soap, and the total quantity must not exceed 0.6 mg/g AC.

Category1	Cas-no.	Category2	Cas-no.
Styrene	100-42-5	4-chloro-3-methylphenol	59-50-7
Butylbenzylphthalate(BBP)	85-68-7	Diisodecylphthalate	26761-40-0
Di-(2-ethylhexyl) phtalate (DEHP)	117-81-7	Diisononyl phtalate=1,2-Benzene-Dicarboxylic acid,diisononyl ester (DINP)	28553-12-0
Di-n-butylphthalate (DBP)	84-74-2	O-phenylphenol	90-43-7
2,2-bis(4-hydroxyphenyl)-propane =Bisphenol A	80-05-7		
Resorcinol	108-46-3		



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3.8 Fragrance

Fragrances used must comply with the International Fragrance Association's (IFRA) guidelines as described in "Code of Practice".

IFRA Guidelines can be found on www.ifraorg.org/guidelines.asp

Musk xylene (CAS-no.81-15-2) and Musk keton (CAS-no.81-14-1) must not be present in the product.

The following fragrance substances must not be present in the product in quantities exceeding 0.01%.

Name	Cas-no.
Amyl cinnamal	122-40-7
Benzyl alcohol	100-51-6
Cinnamyl alcohol	104-54-1
Citral	5392-40-5
Eugenol	97-53-0
Hydroxycitronellal	107-75-5
Isoeugenol	97-54-1
Amylcinnamyl alcohol	101-85-9
Benzyl salicylat	118-58-1
Cinnamal	104-55-2
Coumarin	91-64-5
Geraniol	106-24-1
Hydroxymethylpentylcyclohexenecarboxaldehyd (Methyl heptine carbonate)	31906-04-4
Anisyl alcohol	105-13-5
Benzyl cinnamat	103-41-3
Farnesol	4602-84-0
2-(4-tert-butylbenzyl)-propionaldehyd (Lilial)	80-54-6
Linalool	78-70-6
Benzyl benzoate	120-51-4
Citronellol	106-22-9
Hexyl cinnamaldehyd	101-86-0
d-Limonen	5989-27-5
Methyl heptin carbonat	111-12-6
3-methyl-4-(2,6,6-trimethyl-2-cyclohexen-1-yl)-3-buten-2-on (ã-Methylione)	127-51-5
Oak moss	90028-68-5
Tree moss	90028-67-4

3.9 Colours

All colourants used must be included on the "List of Colouring Agents Allowed for Use in Cosmetic Products" in Annex IV (pg 48-53) of European Commission Directorate 76/768/EEC, 27 July 1976 on the Approximation of the Laws of the Member States relating to Cosmetic Products (OJ, L 262, 27.9.1976, p169). A copy of the Directive is available in the document "The rules governing cosmetic products in the European Union", Volume 1 Cosmetics Legislation, 1999 Edition available: <http://pharmacos.eudra.org/F3/home.html> (case sensitive URL).

3.10 pH regulators

Boric acid, borates and perborates must not be present in the product.

3.11 Toxicity

Products subject to this standard shall not be formulated or manufactured with: any ingredient that is classified as or have constituent substances

1. Which are or cause concern that they are mutagenic

2. Which are known or presumed to be carcinogenic
3. Which are known or presumed to be reproductive or development toxicants
4. Which are known or presumed to be reproductive or development toxicants through lactation or any combination thereof, according to the approved criteria for the classification of hazardous substances by the Australian National Occupational Health and Safety Commission and or the approved criteria of the New Zealand Hazardous Substances and New Organisms Act (1996)

4.0 Consumer Information

a) They must be accompanied by instructions for proper use so as to maximise product performance and minimise waste.

b) All detergents must display on the container a list of product ingredients which complies with the requirements of the Trade Practices Act of Australia.

5.0 Packaging Requirements

All plastic containers and plastic components must be made of plastic that are recycled in Australia (or the country to which the product is exported and sold).

Packaging must not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent recycling (i.e. PVC sleeves, metallic labels).

All plastic packaging (i.e. container, cap, measuring device) must have a plastic resin identification code or a description of the type of plastic clearly visible on each item.

Packaging (including labels) must not contain PVC or any type of chlorinated materials.

6.0 Compliance to Environmental Regulations

The applicant is required to comply with relevant environmental legislation and government orders at the Local, State and Commonwealth level, if these have been issued. An applicant's compliance with this criteria may be established by undertaking a series of random checks and gathering samples of applicant operational procedures and documents by approved assessors as evidence to support compliance during the verification and /or a statement of self declaration by an executive officer of the applicant organisation. Where an applicant is from an overseas jurisdiction, that jurisdictions environmental regulations apply.

PUBLICATION ABSTRACT

Eco-Labeling of Shampoos, Shower Gels and Foam Baths

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Abstract

Goal, Scope and Background Environmental issues of personal care products have been met with little attention in the past. Monitoring data as well as preliminary environmental risk assessments indicate that some ingredients in personal care products might be relevant pollutants in the environment. Following the precautionary principle, eco-labelling is proposed as an effective tool for source control of one major group of personal care products, shampoos, shower gels and foam baths (SSBs). Eco-labelling is a soft, but effective market driven and product specific approach to lower discharge of environmentally detrimental substances. Products that fulfil the criteria proposed help to minimise the impact of SSBs on the environment.

Methods Available assessment tools for dangerous substances (e.g. current legislation on environmental risk assessments and classification, and labelling, eco-labelling criteria for similar products, the calculation of the critical dilution volume) were adapted and integrated into the criteria for the eco-labelling of SSBs.

Results and Discussion A short outline of the eco-labelling criteria developed for SSBs is provided. The basic criteria concern the effects of the substances discharged into the waste water during and after use. Products with an eco-label award may exclusively contain substances for which basic information about their effects on the environment is available. They may not contain persistent, bioaccumulating, toxic or ecotoxicological substances. In addition, the basic criteria include requirements for the container and consumer information.

Conclusions The basic criteria for eco-labelling SSBs are based on the actual state of science and are at the same time as simple and transparent as possible to ensure the best applicability. SSBs that comply with the described basic criteria can contribute to a lower chemical burden of waste water treatment plants and surface water.

Recommendations and Perspective. The proposal for basic criteria described should stimulate discussion on eco-labelling of SSBs. It should help to pass valid criteria supported by authorities, producers and consumer groups for a national or international eco-label, e.g. for the European Flower or the German Blue Angel. In future, the successful introduction of labelled SSBs into the market will raise the awareness of the general public about the environmental effects of personal care products and it will help to promote environmentally compatible products.

Ref: Eco-labelling of shampoo, shower gales and foam baths. by Markus Liebig and Thomas Knacker.

[Http://www.springerlink.com/content/r11xq16828w486x2/](http://www.springerlink.com/content/r11xq16828w486x2/)

CLEAN PRODUCT DEVELOPMENT

A Case Study from DENMARK

The intention of this report is to inspire and guide companies to develop cleaner products and bring them on the market. It is the result of a demonstration project carried out in cooperation between Berendsen Textil Service A/S, FORCE Technology and EcoForum to demonstrate with practical experience how cleaner products can be developed in cooperation with suppliers or the whole value chain.

You do not have to be environmentally concerned to benefit from environmental product development projects. When working with your products, you will probably also find some other improvement options leading to e.g. higher quality or lower costs.

Main conclusions

The project shows that it is possible to develop cleaner products for the market in cooperation with one's suppliers and to achieve positive response from the market.

It has turned out that it is possible to overcome most of the substantial barriers to development by being persistent and patient. A consequence of this is that it should be borne in mind that development projects take a long time.

Examples of barriers overcome in the process are:

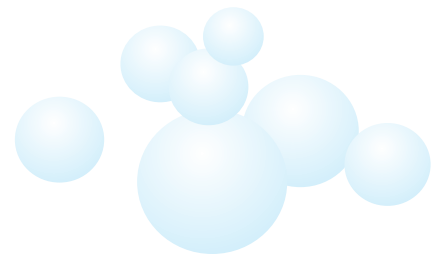
- Different preferences on the market for Berendsen and the suppliers
- Long communication channels

- Differences in terminology and language
- Physical distance
- Lack of knowledge
- Contractual barriers
- Weak "power" relations to the supplier

The experience from Berendsen shows that as a starting point it is easier to cooperate with a supplier in Denmark about development than a supplier from abroad and outside Europe, and it is often necessary to provide the supplier with a large amount of knowledge and competences in relation to, for instance, relevant legislation in the EU to achieve success.

At a related after-work workshop the participants from a number of Danish companies concluded that the customers' demands for environmentally friendly products can be handled positively as an input to innovation.

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David can defeat Goliath

- An example from Berendsen

One of the main suppliers of Berendsen for chemical and cosmetic products for their hygiene service is a very big company based in southern Europe. The purchases by Berendsen are insignificant in relation to the supplier's total turnover on international markets.

Some years ago one or two small companies started to ask Berendsen about the ingredients of their soaps. This initiated a process where a major supplier was critically asked by Berendsen about the ingredients and if they could be improved.

After some pressure, to start they developed a special product for Berendsen not containing an undesired preservative. Berendsen kept the pressure to improve the products further and after a long time the supplier decided to reformulate their standard products to meet the demands of Berendsen.

As a result of this, the products that are supplied today to all customers on the markets of the major supplier have a better environmental and health profile. Hence, the pressure initiated by a few small customers of Berendsen in the end had enormous positive environmental consequences.

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