



Revision of European Ecolabel Criteria for Soaps, Shampoos and Hair Conditioners

DRAFT DOCUMENT

PRODUCT GROUP DEFINITION AND SCOPE

June 2012

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1. PRODUCT GROUP DEFINITION AND SCOPE

In accordance with the Commission Decision establishing the ecological criteria for the product group of soaps, shampoos and hair conditioners¹ the current definition of this product group comprises *"any rinse-off substance and preparation intended to be placed in contact with the epidermis and the hair system with a view exclusively or mainly to cleaning them. That product group shall also comprise any rinse-off substance and preparation intended to be placed in contact with the hair system with a view to improve the condition of the hair (hair conditioners)"*².

The criteria for Ecolabel aim to promote the products which:

- Reduce water pollution,
- Minimise waste production,
- Reduce or prevent the potential risks for the environment related to the use of hazardous substances.

This product group covers products for both private and professional use and it does not cover products that are specifically marketed for disinfecting or anti-bacterial use.

In order to be awarded the Community eco-label for soaps, shampoos and hair-conditioners, a product must fall within the product group "soaps, shampoos and hair-conditioners" and must comply with the ecological criteria set in the respective Commissions Decision.

Consideration on the extension of scope and revision of definition

Scope of the product group

In this revision process extension of the existing scope of soaps, shampoos and hair conditioners product group described above has been considered, taking into account that other cleaning products with a certain degree of similarity, for example a common function or a way of application or with similar chemical composition can exist and, although they have not been so far covered by the EU Ecolabel, they could be included in the scope in the revised criteria document. This was discussed in the 1st AHWG meeting and several stakeholders in general welcomed a possible extension of the current scope.

With this aim, typical ingredients of each new considered product were analyzed and compared with a typical composition of soaps, shampoos and hair conditioners³. First, a list of products which fulfils the same or a similar function of cleaning was prepared. The composition of the following products:

- shaving products: shaving-foam, -cream, -gel and -soap,
- toothpaste,
- shampoo for animals, especially pets,
- wet wipes,

¹ Commission Decision of 21 June 2007 establishing the ecological criteria for the award of the Community eco-label to soaps, shampoos and hair conditioners, available online at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:186:0036:0045:EN:PDF>.

² Note: disinfecting products (cleaning products with anti-microbial function) are excluded from the product group (from ordinary cleaning products).

³ For details please see Appendix I: Scope of the product group.

- cleansing and remover make-up products,

was analysed in order to see if the ingredients and functions are similar to the products already covered by the existing criteria. Further, also the environmental fate of the considered products was analysed.

Based on the outcomes of this preliminary analysis⁴ some products with rinse-off application were found to have a similar composition and are considered to be suitable to be included in the product group, as it is the case of **shaving foam, gel, cream and soap**. It is expected that products having similar ingredients have, from an LCA point of view, to a great extent a similar environmental profile. This would allow including these types of products even in this criteria revision.

Other products with cleaning function and rinse-off application proposed to be included are **pets' shampoos**. Products for animals are rinsed-off to water in the same way as shampoos and soaps for people and the composition is similar. There has been some interest in the ecolabelling of shampoos for pets (e.g. in Nordic Ecolabel), even though there are no labelled products on the market at the moment⁵.

Further, some products with a similar way of application are not proposed to be included in the revised scope based on the results obtained because their composition differed too much from soaps and shampoos, as it was e.g. in the case of **toothpaste**.

Some other products with cleaning function, for example **wet wipes**, were found to have to a limited extent a similar composition (except of the material used as support in wipes). Nevertheless, their way of application and the final disposal differ from those of the rinse-off products (wet wipes will be disposed with other household waste) and therefore it is not proposed to include them in the extended product group.

Concerning **cleansing and remover make-up products**, the composition differs from soaps and shampoos and the way of application is different from rinsed-off products which causes that the final fate is different. In consequence they were excluded from the potential scope extension.

Rationale

When assessing the potential environmental impacts that a cosmetic product can cause, all life cycle stages have to be taken into account: ingredients manufacturing, product manufacturing, packaging and distribution, use and disposal after use with municipal waste or through wastewater (considering the possible final release of substances into the environment and the harmful effects that they could cause).

The release of the products into the environmental compartments (water, soil, air) will be determined partly by the way of application⁶. **Rinse-off products** will be disposed and diluted to water after use via the wastewater route, while **non rinse-off products** (e.g. wet wipes, cleansing and remover make-up) are initially applied to remain on body surfaces (skin), although a fraction of these chemicals can also reach the municipal sewage plants if they are eliminated e.g. by washing, or can

⁴ For details please see Appendix I: Scope of the product group.

⁵ Nordic Ecolabelling Cosmetic products 090 Background document – 16 February 2011. In the current version of the Nordic Swan criteria for Cosmetic Products the animal shampoos are included in the scope of the product group.

⁶ Nordic Ecolabelling Cosmetic products 090 Background document – 16 February 2011.

accidentally reach the aquatic environment. Finally, those cosmetic products containing a solid single-use support (e.g. wipes) or those which are removed with solid cottons or single-use towels (e.g. cleansing and remover make-up) will be disposed as solid waste after being used.

After use the **rinse-off products** will be released to domestic wastewater, which is expected to be treated in a sewage plant before being released to aquatic environments. In the LCA conducted for this revision process, it was found that release to water was one of the life stages with major environmental impacts. After being treated, depending on the level of sewage treatment and on the properties of the ingredients, some substances will be degraded but a certain fraction of the ingredients from cosmetic products may end up in the aquatic environment or be adsorbed into the sludge. Therefore, for these products properties such as high biodegradability, low bioaccumulation and low toxicity to the aquatic environment are important⁷ to guarantee that the products' ingredients will have low impact on the environment. For that reason the current EU Ecolabel criteria for this product group are aimed to high extent at reducing the impact of rinse-off products' ingredients released into the aquatic environment.

The environmental safety is determined basically by the environmental fate and the potential impact of a chemical in the specific environmental compartment⁸. Both aspects depend on the properties of the substances. The environmental fate is determined by the physicochemical properties such as water solubility, adsorption behaviour, volatility and biodegradability which determine the distribution of a chemical in the environmental compartments (water, soil, air). The potential impact of a chemical in the specific environmental compartment is determined by the ecotoxicological properties.

The ingredients present in rinse-off products are to a certain extent different from those in non rinse-off products mainly because they differ in their purpose: use and function are different.

For example in most cases, more than 80% of the mass of organic product ingredients in rinse-off products are readily biodegradable while in leave-on products are only more than 60%. This is mainly due to a significant percentage of polymeric and/or poorly soluble ingredients present in leave-on cosmetic products that biodegrade slowly or not at all. As a result, the biodegradability criterion could differ for both kinds of products and setting specific thresholds would be needed.

Another issue that is expected to differ for rinse-off and non rinse-off products is the toxicity. Rinse-off products will be disposed of after use via the waste water route. Consequently, a certain percentage of the ingredients from rinse-off cosmetic products may end up in the aquatic environment. Surfactants are the key components in rinse-off products and can interact with biological surfaces; therefore they are relatively toxic to aquatic organisms. Toxicity to the aquatic environment is thus of high importance for rinse-off products.

Aspects such as use of fragrances and nanomaterials could be also different for both types of products because leave-on products are initially applied to remain on body surfaces, and stricter requirements need to be taken into consideration.

⁷ Nordic Ecolabelling Cosmetic products 090 Background document – 16 February 2011. In the current version of the Nordic Swan criteria for Cosmetic Products the animal shampoos are included in the scope of the product group.

⁸ Pharmaceuticals and Personal Care Products in the Environment Letter to the Editor ENVIRONMENTAL SAFETY ASPECTS OF PERSONAL CARE PRODUCTS— A EUROPEAN PERSPECTIVE. Environmental Toxicology and Chemistry, Vol. 28, No. 12, pp. 2485–2489, 2009 SETAC (USA)

Finally, some specific substances should be proposed to be restricted based on the composition on leave-on and rinse-off cosmetic products.

Consequently, it can be expected that the environmental behavior and impacts are different for these two product groups. For these reasons a new category for “leave-on cosmetic products” (non rinse-off products”) could be created in a future but taking into account different thresholds parameters for e.g. regarding biodegradability, toxicity, specific restricted substances. For products with this way of application (intended to be applied and absorbed by the skin or hair and not rinsed-off) other aspects have to be considered and additional criteria, which differ from those existing ones, would need to be developed. Differences in ingredients used and different impacts in the end of life phase would need to be analyzed further in a comprehensive study in order to develop the criteria for other cosmetic products than those already covered by the current product scope or products very similar to them in composition and environmental profile.

Furthermore, some stakeholders from MS expressed interest to cover within the scope of EU Ecolabel all cosmetic products. This proposal would nevertheless require extensive environmental evaluation of different product groups and appropriate determination of key environmental areas for which the criteria should be set. Such a development could be conducted in the future if it is proved that significant environmental improvement can be achieved.

Written stakeholders feedback received with regard to the first proposal for the revised Ecolabel criteria and the discussions around the 1st AHWG meeting supported including other rinse-off products with similar purposes like shaving foam, shaving gel, shaving cream and shaving soap. Less clear was the consideration on inclusion of shampoos for animals, especially pets.

When including shaving foams and gels into the scope of the Ecolabel, it will be important to set additional criteria concerning the packaging, since today those products are still sold in aerosol containers.

The results and conclusions of the scope revision can be summarised as follows:

Shaving products are proposed to be included in the product category under study due to a certain degree of similarity: similar chemical composition and environmental fate (they are rinsed-off to water).

Rinse-off products for animals are not covered by the cosmetics directive, but could be covered by the scope of the revised product group due to similar formulation and environmental fate.

The wet wipes for “cosmetic purposes” (such as facial wipes, cleansing wipes, hand and body wipes, or moist towelettes) are not proposed to be included in this product group because the way of application differs from the application of rinse-off products and the environmental profile is expected to be very different compared to the products analysed in the LCAs conducted in the project and presented in the technical background report.

An extension of the scope for toothpaste is not proposed because its composition differs significantly to the composition of the currently covered products. Further, an inclusion of toothpaste will need a comprehensive investigation for determining new or significantly modifying current criteria proposal as the user comes in contact with toothpaste through the mouth e.g. for hazardous substances criterion there is a potential different exposure path which will need to be investigated.

Cleansing and remover make-up products were not proposed to be included because the way of application is different from rinse-off products, which also causes that the final LCA environmental profile is different.

Definition of the product group

Taking into account the definition of cosmetic products by the Regulation (EC) No 1223/2009:

'cosmetic product' means any substance or mixture intended to be placed in contact with the external parts of the human body (epidermis, hair system, nails, lips and external genital organs) or with the teeth and the mucous membranes of the oral cavity with a view exclusively or mainly to cleaning them, perfuming them, changing their appearance, protecting them, keeping them in good condition or correcting body odours;

and the existing definition of the product group of soaps, shampoos and hair conditioners, the revised name and definition of this product group could be as follows:

"any rinse-off substance and preparation intended to be placed in contact with the epidermis and the hair system with a view exclusively or mainly to cleaning them. That product group shall also comprise any rinse-off substance and preparation intended to be placed in contact with the hair system with a view to improve the condition of the hair (hair conditioners) and any rinse-off substance and preparation intended to be placed in contact with the epidermis with a view to protect it and to lubricate the hair before shaving".

Further, if animal products shall also be covered, the following sentence is proposed to be added:
"Shampoos for animals are eligible for EU Ecolabel".

Moreover, as supported by many stakeholders and agreed in the 1st AHWG a **change of the product group name from "soaps, shampoos and hair conditioners" to "rinse-off cosmetic products"** is undertaken.

2. APPENDIX I: SCOPE OF THE PRODUCT GROUP

The existing definition of soaps, shampoos and hair conditioners product group has been analysed to determine if it shall be amended, e.g. if other cleaning products, which could be covered by the Ecolabel criteria for this group, exist and should be included in the current revision process .

Products with a certain degree of similarity, for example a common function or way of application or with similar chemical composition should be taken into account. Other rinse-off cosmetic products for similar purposes have been discussed for their inclusion, e.g. shaving products or toothpaste. The possible inclusion of products with similar purposes for animals, especially pets, as well as leave-on products like wet wipes and cleansing and remover make-up products have also be discussed.

With this aim, the typical ingredients of each new considered product group have been analyzed and compared with the composition of soaps, shampoos and hair conditioners. The analysis covered products like:

- shaving-foam, -cream, -gel, -soap,
- toothpaste,
- shampoo for animals,
- wet wipes,
- cleansing and remover make-up products.

In order to assess the extension of the product scope, a brief description on the products which could potentially be included in the current product group has been prepared. The analysis includes:

- formulation (information about typical ingredients used in each product category),
- basic market information,
- brief environmental information obtained from existing studies,

First, the formulation of products covered by the current criteria document is briefly presented and afterwards the potential new product groups are given. The information regarding the formulation was obtained from the following sources:

A. Cosmetics Europe (former Colipa) frame formulations⁹

Article 7(3) of the Cosmetics Directive 76/768/EEC¹⁰ specifies that Member States may require the provision of safety information to the competent authority (in the majority of cases: Poison Centres) for products marketed in the EU. The purpose of this is to enable the correct medical treatment to be given promptly in the event of an accident, such as a child consuming a cosmetic product.

⁹ COLIPA GUIDELINES. Cosmetic Frame Formulations. Guidelines realized in collaboration with the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). January 2000.

¹⁰ Council Directive of 27 July 1976 on the approximation of the laws of the Member States relating to cosmetics products (76/768/EEC) (OJL 262, 27.9.1976,P.169): <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1976L0768:20100301:en:PDF>.

The Frame Formulations¹¹ are based on a system developed jointly by the UK Cosmetic, Toiletry and Perfumery Trade Association (CTPA) with the National Poisons Information Service (London) and detail the type of ingredients and their maximum concentration (qualitative and quantitative information) for most cosmetic products on the European market. If a product fits the Frame Formulation, then only basic information needs to be provided to the competent authorities at national level. More information should be given to the Poison Centres upon request.

Formulations used in the study have been defined based on Cosmetics Europe frame formulations, from where the main ingredients for each product have been defined.

B. Mintel GNPD database (the Global New Products Database)¹²

The Global New Products Database monitors product innovation and retail success in consumer packaged goods markets, worldwide. The GNPD offers coverage of new product activity for competitor monitoring, category awareness and new product idea generation.

GNPD is used to research current consumer markets and latest ingredient usage to develop new product ideas and concepts.

GNPD searches product formulations globally and allows searching and analysing ingredients trends in new consumer packaged goods. Whether searching for a specific emerging ingredient or for an overarching trend in ingredients, GNPD ingredients helps you understand activity in the local market or on an international scale.

Mintel GNPD is used to understand how brands evolve and change based on global trends: ingredient trends, packaging trends and a forecast prediction for the category.

GNPD database contains more than 300.000 new products, as well as editorial and expert analysis on global trends.

Information on the characteristics of different products existing on the market has been gathered using the GNPD in order to do a preliminary analysis of the most common substances and materials used (both for product content and packaging) for the products under study.

Representativeness has been taken into account, so that different kinds of products included in the category has been studied: standard products, ecolabelled products, baby products, professional and household products.

The number of products analyzed for each kind of product (liquid soap, solid soap, shampoo and hair conditioner) is presented below:

¹¹ COLIPA GUIDELINES. Cosmetic Frame Formulations. Guidelines realized in collaboration with the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). January 2000.

¹² Source Mintel GNPD Data Base. For details see the database website: <http://www.gnpd.com/>.

Table 1. Number of products analysed

Product group	Number of products analysed
Liquid soap	20 362
Solid soap	4 183
Shampoo	13 188
Hair conditioner	5 327

Source: Elaborated based on GNPD (Global Database of New Products) results for 2011

The formulation of the products covered currently by the product group under study, i.e. liquid soaps, shampoos, solid soaps and hair conditioners is presented below.

2.1 LIQUID SOAPS

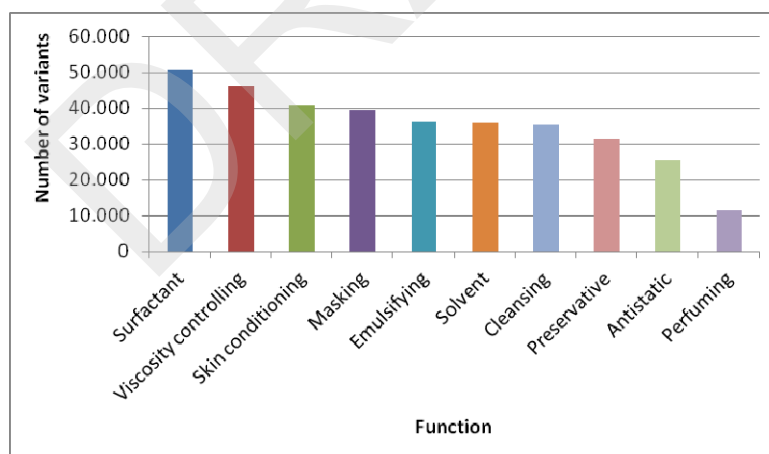
FORMULATION

20 362 products (liquid soaps) have been found in GNPD and analyzed.

Raw materials

The top ingredients present in liquid soaps are presented in Figure 1:

Figure 1. Top ingredients present in liquid soaps



Number of variants: Number of different substances that perform the same function

Source: Elaborated based on GNPD (Global Database of New Products) results for 2011

Based on the Cosmetics Europe report "Cosmetic frame formulations"¹³ the average composition of liquid soap products is given in the below table:

¹³ COLIPA GUIDELINES. Cosmetic Frame Formulations. Guidelines realized in collaboration with the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). January 2000.

Table 2. Average composition of liquid soaps

SOAP	
LIQUID SOAP	
Ingredients	Maximum levels (% w/w)
Anionic / amphoteric surfactants (e.g. laureth sulfates, betaines)	40
Non-ionic surfactants (e.g. glucose derivatives)	40
Soaps (sodium, potassium or triethanolamine)	20
Emollients (e.g. PEG-7, glyceryl cocoate)	20
Humectants (e.g. glycerin, propylene glycol, sorbitol)	10
Viscosity controlling agents (e.g. sodium chloride, hydroxycellulose derivatives)	5
Additional ingredients (e.g. plant extracts)	5
Pearlescent agents (e.g. glycol distearate, glycol stearate)	5
Skin conditioning agents (e.g. cationic cellulose)	5
Perfume	2
Preservatives, antimicrobials	2
Cosmetic colorants	1
Aqua	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations.

2.2 SOLID SOAPS

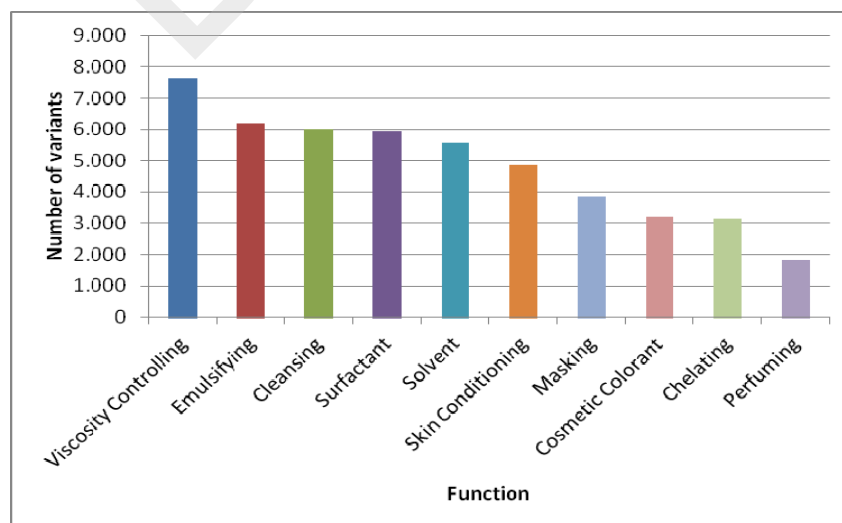
FORMULATION

4 183 products (solid soaps) have been found and analyzed.

Raw materials

The top ingredients present in solid soaps are given in Figure 2:

Figure 2. Top ingredients present in solid soaps.



Number of variants: Number of different substances that perform the same function

Source: Bases on GNPD (Global Database of New Products) results from 2011

Based on the Cosmetics Europe report "Cosmetic frame formulations"¹⁴ the average composition of solid soaps products is given in the below table:

Table 3. Average composition of solid soaps

SOAP	
SOAP - TOILET	
Ingredients	Maximum levels (% w/w)
Soap (based on tallow, palm oil and coconut oil fatty acids)	99
<i>Glycerin</i>	20
Emollients, humectants (e.g. <i>lanolin</i>)	10
Amphoteric /anionic surfactants (e.g. <i>cocamidopropyl betaine</i>)	5
Mineral and/or vegetable oils (e.g. palm oil)	5
<i>Perfume</i>	5
Cosmetic colorants	2.5
<i>Titanium dioxide</i>	2
Skin conditioning agents (e.g. <i>polyquaternium-7</i>)	2
Additional ingredients (e.g. plant extracts, optical brighteners)	2
Preservatives, antimicrobials, antioxidants, chelating agents	1
Aqua	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

2.3 SHAMPOOS

FORMULATION

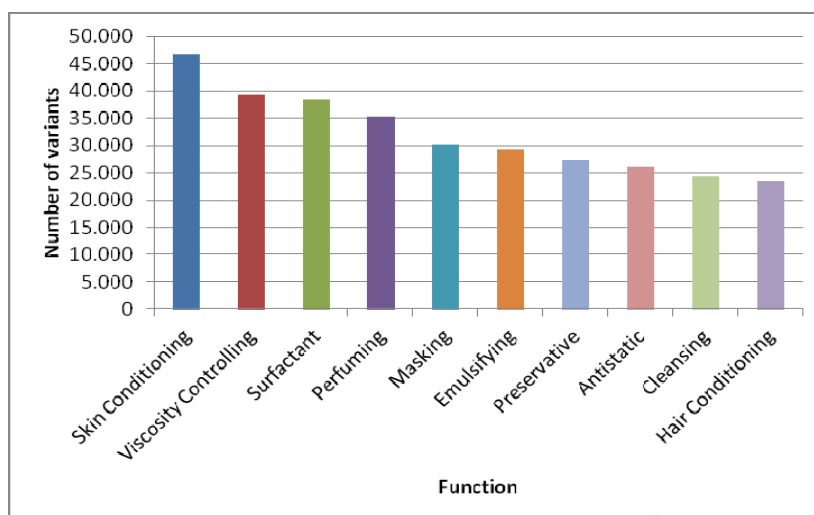
13 188 products (shampoos) has been found and analyzed.

Raw materials

The top ingredients present in shampoos are given in Figure 3:

¹⁴ COLIPA GUIDELINES. Cosmetic Frame Formulations. Guidelines realized in collaboration with the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). January 2000.

Figure 3. Top ingredients present in shampoos



Number of variants: Number of different substances that perform the same function
 Source: Based on GNPD (Global Database of New Products) results from 2011

Based on the Cosmetics Europe report “Cosmetic frame formulations¹⁵” the average composition of shampoo products is given in the below table:

Table 4. Average composition of shampoos

HAIR PRODUCTS	
SHAMPOO - LIQUID AND CREAM	
Ingredients	Maximum levels (% w/w)
Anionic surfactants (e.g. sodium/ammonium/TEA lauryl sulfates, sodium/ammonium/TEA laureth sulfates)	30
Amphoteric surfactants (e.g. betaine derivatives)	20
Non-ionic surfactants (e.g. fatty alkanolamides)	15
Viscosity controlling agents (e.g. <i>propylene glycol</i> , PEG)	10
Cationic surfactants C12 (e.g. <i>stearamidopropyl dimethylamine</i> , <i>distearyldimonium chloride</i>)	5
Hair conditioning agents (e.g. silicone derivatives, cysteine derivatives, cellulose derivatives, fatty acid esters)	each up to 5
Additional ingredients (e.g. UV filters, pearlescent agents, opacifying agents)	each up to 5
Preservatives, antimicrobials	1
Chelating agents (e.g. <i>disodium EDTA</i>)	0.5
<i>Aqua</i>	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

2.4 HAIR CONDITIONERS

FORMULATION

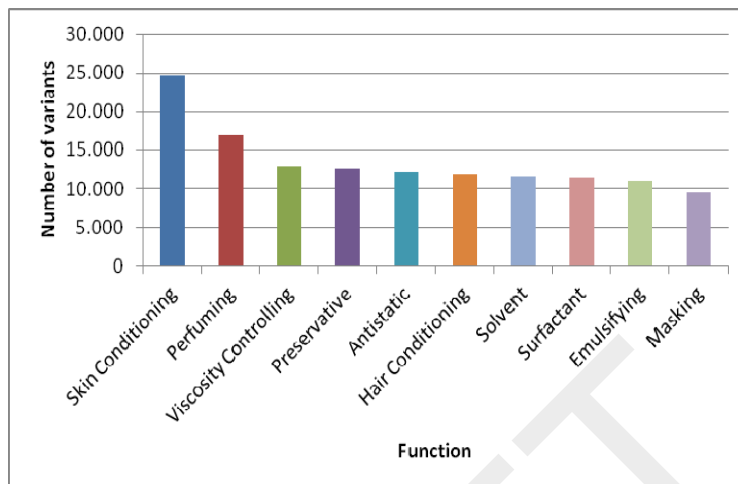
5 327 products (hair conditioners) has been found and analyzed.

¹⁵ COLIPA GUIDELINES. Cosmetic Frame Formulations. Guidelines realized in collaboration with the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). January 2000.

Raw materials

The top ingredients present in hair conditioners are given below:

Figure 4. Top ingredients present in hair conditioners



Number of variants: Number of different substances that perform the same function
Source: Based on GNPD (Global Database of New Products) results from 2011

Based on the Cosmetics Europe report "Cosmetic frame formulations"¹⁶ the average composition of hair conditioners products is given in the below tables:

Table 5. Average composition of hair conditioners

HAIR PRODUCTS	
HAIR CONDITIONER	
Ingredients	Maximum levels (% w/w)
Oils, waxes (mineral and vegetable), silicones and fatty alcohols (e.g. <i>petrolatum</i> , <i>triticum vulgare</i> , <i>amodimethicone</i> , <i>cetearyl alcohol</i>)	20
Ethanol (<i>alcohol</i> , <i>alcohol denat.</i>)	15
Emulsifying agents (e.g. <i>ceteth-30</i> , <i>cetyl alcohol</i>)	10
Amphoteric surfactants (e.g. betaines derivatives)	10
Additional ingredients (e.g. proteins, chelating agents, pearlescent agents)	10
Cationic surfactants C12 (e.g. <i>cetrimonium chloride</i>)	5
Emollients, humectants (e.g. <i>glycerin</i> , <i>propylene glycol</i>)	5
Viscosity controlling agents (e.g. <i>carbomer</i> , <i>hydroxyethylcellulose</i>)	5
Polymers, resins (e.g. <i>polyquaternium-10</i> , <i>polyquaternium-11</i> , <i>butyl ester of PVM/MA copolymer</i>)	5
Perfume	3
UV filters	1
Preservatives, antimicrobials	1

¹⁶ COLIPA GUIDELINES. Cosmetic Frame Formulations. Guidelines realized in collaboration with the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). January 2000.

Cosmetic colorants	1
<i>Aqua</i>	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

Table 6. Average composition of silicone based hair conditioners

HAIR PRODUCTS	
HAIR CONDITIONER (SILICONE BASED)	
Ingredients	Maximum levels (% w/w)
Silicones and volatile silicones (e.g. <i>cyclomethicone</i>)	99
Additional ingredients (e.g. UV filters, polymers)	10
Emulsifying agents (e.g. ethoxylated fatty alcohols)	6
Ethanol (<i>alcohol, alcohol denat.</i>)	5

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

If we compare all the ingredients present in soaps, shampoos and hair conditioners, we will find the following differences (see below table):

- The main difference between bar and liquid soaps is the alkali used to saponify the oils. In bar soap the alkali used is sodium hydroxide while in liquid soaps it is potassium hydroxide.
- The difference between soaps and shampoos are mainly the shares of the oils.
- Shampoos and hair conditioners are quite different from each other. Firstly, they differ in their purpose. Shampoos are used to clean (remove oil, dust, dirt pollutants and dead skin cells) the hair. On the other hand, conditioners are hair care products that are used to soften the texture of the hair, making them softer and easier to comb after washing. For this reason, the components used to manufacture shampoos and conditioners are also different. Conditioners contain moisturizers to help make the hair more manageable and also proteins and glossers to help strengthen and shine the hair. Shampoos contain ingredients that are found in soaps. Another difference is the pH, while in shampoos is slightly acidic, in conditioners is more acidic than shampoos because it helps promote the development of amino acids and to help keratin to bond onto the hair. Although the composition of shampoos and hair conditioners is different, both fall within the same product group of soaps, shampoos and hair conditioners complying with the same ecological criteria set in the respective Commission Decision.

Table 7. Comparative table of ingredients in soaps, shampoos and hair conditioners

SOAPS, SHAMPOOS AND HAIR CONDITIONERS				
Ingredients	LIQUID SOAP	SOLID SOAP	SHAMPOOS	HAIR CONDITIONERS
Soap (based on tallow, palm oil and coconut oil fatty acids)				
Oils, waxes (mineral and vegetable), silicones and fatty alcohols (e.g. <i>petrolatum, triticum vulgare, amodimethicone, cetearyl alcohol</i>)				
Anionic / amphoteric surfactants (e.g. laureth sulfates, betaines)				
Cationic surfactants C12 (e.g. <i>stearamidopropyl dimethylamine, distearyldimonium chloride</i>)				
Non-ionic surfactants (e.g. glucose derivatives)				
Soaps (sodium, potassium or triethanolamine)				
Emollients (e.g. <i>PEG-7, glyceryl cocoate, glycerin</i>)				
Ethanol (<i>alcohol, alcohol denat.</i>)				
Emulsifying agents (e.g. <i>ceteth-30, cetyl alcohol</i>)				
Humectants (e.g. <i>glycerin, propylene glycol, sorbitol</i>)				
Viscosity controlling agents (e.g. <i>sodium chloride, hydroxycellulose derivatives</i>)				
Additional ingredients (e.g. plant extracts, proteins, optical brighteners, opacifying agents)				
Mineral and/or vegetable oils (e.g. palm oil)				
Pearlescent agents (e.g. <i>glycol distearate, glycol stearate</i>)				
Skin conditioning agents (e.g. cationic cellulose)				
<i>Titanium dioxide</i>				
Chelating agents (e.g. <i>disodium EDTA</i>)				
Polymers, resins (e.g. <i>polyquaternium-10, polyquaternium-11, butyl ester of PVM/MA copolymer</i>)				
<i>Perfume</i>				
Preservatives, antimicrobials				
Cosmetic colorants				
Hair conditioning agents (e.g. silicone derivatives, cysteine derivatives, cellulose derivatives, fatty acid esters)				
UV filters				
Aqua				

Source: COLIPA GUIDELINES. Cosmetic Frame Formulation

2.5 SHAVING PRODUCTS

In the section below, the first group of products which has been considered for the potential scope extension is presented. Shaving products are preparations used to carry out shaving. There are two types:

- Products used before shaving
- Products used after shaving

In this report, only preparations **before shaving** have been analysed. They include:

- **Shaving cream and brushless shaving cream (soap based and brushless):** The cream is applied to the hair face, to provide lubrication and avoid skin irritation from shaving. Shaving cream can be bought in a spray can or it can be purchased in tubes. Shaving cream in can is commonly dispensed as foam or a gel. The cream itself commonly consists of a mixture of soaps, oil, surfactants and water or alcohol, under a proper pH.
- **Shaving gel:** is a lubricating product designed to soften the hair being shaved, preventing the skin irritation. Shaving gel is packed in tubs as well as in cans, and is usually designed to foam into a thick, dense lather. Many of the basic ingredients are the same as shaving cream.
- **Shaving gel (post foaming):** Shaving gel will foam when it is agitated in the hands or on the face.
- **Shaving foam aerosol:** These products usually contain aerosol propellants to help use the product. Hydrocarbon propellants like butane or propane are used. These substances present the greatest concern about the environmental impact for shaving preparations.
- **Shaving soap/stick:** Using a shaving brush, soap is whipped into a lather which provides lubrication and protection for the skin irritation. It is less used in comparison with shaving foam or gel. The composition is similar to normal bath soap but oriented to produce a stable lather. In this case, potassium hydroxide and sodium hydroxide are used as saponification agents rather than just sodium hydroxide.

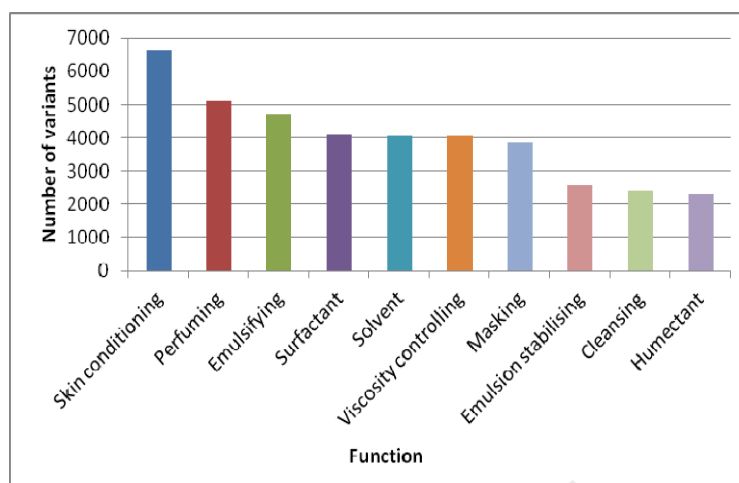
FORMULATION

1 965 products has been found and analyzed in GNPD Database.

Raw materials

The top ingredients present in shaving preparations are below:

Figure 5. Top ingredients present in shaving preparations



Number of variants: Number of different substances that perform the same function
 Source: Based on GNPD (Global Database of New Products) results from 2011

Based on the Cosmetics Europe report “Cosmetic frame formulations”¹⁷ the average composition of shaving products is given in the below table:

Table 8. Average composition of shaving cream and brushless shaving cream – soap based

SHAVING PRODUCTS	
SHAVING CREAM AND BRUSHLESS SHAVING CREAM / SOAP BASED	
Ingredients	Maximum levels (% w/w)
Soaps (e.g. mixed sodium and potassium stearates, laurates and cocoates)	60
Humectants (e.g. <i>glycerin, propylene glycol</i>)	30
Viscosity controlling agents, emulsifying agents (e.g. fatty acid glycol esters, fatty alcohols)	15
Emollients (e.g. lanolin derivatives, oils, fatty acid esters)	15
Silicones (e.g. <i>dimethicone</i>)	10
Synthetic surfactants (e.g. anionic such as <i>sodium laureth sulfate</i>)	5
<i>Perfume</i>	2
Additional ingredients (e.g. viscosity controlling agents, vitamins)	2
Opacifying agents (e.g. <i>titanium dioxide</i>)	1
<i>Menthol</i>	1
Anticorrosives (e.g. <i>sodium metasilicate</i>)	0.5
<i>Sodium borate</i>	0.5
Chelating agents	0.5
Antioxidants	0.1
<i>Aqua</i>	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

¹⁷ COLIPA GUIDELINES. Cosmetic Frame Formulations. Guidelines realized in collaboration with the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). January 2000.

Table 9. Average composition of shaving cream and brushless shaving cream – brushless

SHAVING PRODUCTS	
SHAVING CREAM AND BRUSHLESS SHAVING CREAM / BRUSHLESS	
Ingredients	Maximum levels (% w/w)
Fatty acids	40
Oils (e.g. mineral oil, lanolin oil)	20
Soaps (e.g. <i>Tea-stearate</i> and <i>TEA-laurate</i>)	10
Silicones (e.g. <i>dimethicone</i>)	10
Additional ingredients (e.g. vitamins, plant extracts)	2
<i>Perfume</i>	2
Antioxidants, chelating agents	0.5
<i>Aqua</i>	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

Table 10. Average composition of shaving gel

SHAVING PRODUCTS	
SHAVING GEL	
Ingredients	Maximum levels (% w/w)
Film forming agents (e.g. <i>glyceryl polymethacrylate</i>)	10
Silicones (e.g. <i>dimethicone</i>)	5
Viscosity controlling agents (e.g. <i>hydroxyethylcellulose</i>)	3
Emulsifying agents, surfactants (e.g. <i>sodium laureth sulfate</i>)	3
Additional ingredients (e.g. vitamins, plant extracts)	2
<i>Perfume</i>	1
Cosmetic colorants	1
Preservatives, antimicrobials	1
<i>Aqua</i>	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

Table 11. Average composition of shaving gel (post foaming)

SHAVING PRODUCTS	
SHAVING GEL (POST FOAMING)	
Ingredients	Maximum levels (% w/w)
Soaps (e.g. potassium salts of fatty acids, triethanolamine salts of fatty acids)	30
Humectants (e.g. glycerin)	15
Emulsifying agents, surfactants (e.g. PEG-150 distearate)	10
Additional ingredients (e.g. vitamins, plant extracts)	5
Post foaming agents (e.g. hydrocarbon)	5
Viscosity controlling agents (e.g. cellulose derivatives)	2
Silicones (e.g. <i>dimethicone</i>)	2
Parfum	2
Skin conditioning agents (e.g. polyquaternium-7)	2
Cosmetic colorants	1
Preservatives, antimicrobials	0.2

SHAVING PRODUCTS	
SHAVING GEL (POST FOAMING)	
Ingredients	Maximum levels (% w/w)
Menthol	0.2
Aqua	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

Table 12. Average composition of shaving foam aerosol

SHAVING PRODUCTS	
SHAVING FOAM AEROSOL	
Ingredients	Maximum levels (% w/w)
Mixed alkanolamine / sodium / potassium soaps	30
Humectants (e.g. glycerin)	15
Propellants (e.g. hydrocarbons)	15
Emollients (e.g. waxes, lanolin, silicone derivatives)	10
Anionic surfactants (e.g. sodium laureth sulfate)	10
Non-ionic surfactants (e.g. lauramide DEA)	10
Emulsifying agents (e.g. PEG derivatives)	5
Additional ingredients (e.g. proteins, vitamins)	2
Parfum	1
Preservatives, antimicrobials	1
Viscosity controlling agents (e.g. cellulose derivatives)	1
Menthol	0.5
Aqua to	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

Table 13. Average composition of shaving soap / stick

SHAVING PRODUCTS	
SHAVING SOAP / STICK	
Ingredients	Maximum levels (% w/w)
Mixed sodium and potassium stearates and laurates	90
Humectants (e.g. glycerin)	15
Non-ionic surfactants (e.g. polysorbates)	5
Silicones (e.g. dimethicone)	5
Additional ingredients (e.g. vitamins, plant extracts, chelating agents)	2
Parfum	2
Titanium dioxide	1
Preservatives, antimicrobials	1
Antioxidants	0.1
Menthol	0.1

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

The objective of any shaving preparation is to wet and soften the hair to be shaved, decreasing the effect of the skin irritation.

The main differences between compositions are the quantities in which standard ingredients are used and the choice of substitutes for the few ingredients that are variable. The three major ingredients present in the formula of shaving creams are:

- Water,
- Saturate fatty acid such as stearic acid, one of the main ingredients in soap making,
- Surfactant: for example triethanolamine

Other ingredients that can vary are:

- Emulsifiers such as Lanolin or polyoxyethylene sorbitan monostearate to mix immiscible substances and hold water to the skin,
- Humectant such as glycerine, renders skin softers and more supple. Also acts as a moisturiser and lubricator.

The main differences between formulations are the proportions of ingredients, the variability of some specific ingredients such as emulsifiers and/or perfumes and the manufacturing process. The choice of aerosol propellant is also important for shaving foams. Most common are butane, isobutene and propane.

After comparing the ingredients present in soaps and shaving cream preparations in the table below, it is considered that, although the composition between them is slightly different, shaving products could be included within the same product group of rinse-off products.

DRAFT

Table 14. Comparative table of ingredients in soaps and shaving cream preparations

COMPARATIVE LIQUID/SOLID SOAP AND SHAVING CREAM				
Ingredients	LIQUID SOAP	SOLID SOAP	SHAVING CREAM AND BRUSHLESS SHAVING CREAM /SOAP BASED	SHAVING CREAM AND BRUSHLESS SHAVING CREAM / BRUSHLESS
Soap (based on tallow, palm oil and coconut oil fatty acids)				
Oils, waxes (mineral and vegetable), silicones and fatty alcohols (e.g. <i>petrolatum, triticum vulgare, amodimethicone, cetearyl alcohol</i>)				
Anionic / amphoteric surfactants (e.g. laureth sulfates, betaines)				
Anionic / amphoteric surfactants (e.g. laureth sulfates, betaines)				
Non-ionic surfactants (e.g. glucose derivatives)				
Soaps (sodium, potassium, triethanolamine or mixed sodium and potassium stearates, laureates and cocoates)				
Emollients (e.g. <i>PEG-7, glyceryl cocoate, glycerine, lanolin derivatives, oils, fatty acid esters</i>)				
Emulsifying agents (e.g. <i>ceteth-30, cetyl alcohol</i>)				
Humectants (e.g. <i>glycerin, propylene glycol, sorbitol</i>)				
Viscosity controlling agents (e.g. <i>sodium chloride, hydroxycellulose derivatives</i>)				
Additional ingredients (e.g. plant extracts, proteins, optical brighteners, opacifying agents, vitamins)				
Mineral and/or vegetable oils (e.g. palm oil)				
Pearlescent agents (e.g. <i>glycol distearate, glycol stearate</i>)				
Skin conditioning agents (e.g. cationic cellulose)				
<i>Titanium dioxide</i>				
Chelating agents (e.g. <i>disodium EDTA</i>)				
<i>Perfume</i>				
Preservatives, antimicrobials				
Cosmetic colorants				
Hair conditioning agents (e.g. silicone derivatives, cysteine derivatives, cellulose derivatives, fatty acid esters)				
Menthol				
Anticorrosives (e.g sodium metasilicate)				
Sodium borate				
Antioxidants				
Aqua				

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

BASIC MARKET INFORMATION

The main companies producing shaving products in Europe are presented in below:

Table 15. Main companies for shaving products in Europe

Company	Percentage of products (%)
1. Gillette	10.9
2. Procter & Gamble	8.6
3. Beiersdorf	7.4
4. Wilkinson Sword	3.9
5. L'Oréal	2.4
6. Oriflame	2.0
7. King of Shaves	1.9
8. Sara Lee	1.6
9. DM Drogerie Markt	1.4
10. Evyap	1.4
11. The Body Shop	1.2
12. BiC	1.2
13. Carrefour	1.2
14. Colgate-Palmolive	1.1
15. Vichy	1.1
16. Parfums Christian Dior	1.0
17. Avon	0.9
18. Schwarzkopf & Henkel	0.9
19. Peggy Sage	0.8
20. Rossmann	0.8
Others	48.1

Source: Based on GNPD (Global Database of New Products) results from 2011

According to Mintel study for shaving and depilatory products: **Mintel GNPD Category Insight Shaving & Depilatories** (2011) the basic information about new product launches and main claims are indicated below:

Market volume and launches:

- New product launches in 2011 fell by 15%.
- Europe remained the most active region with 42% of launches, followed by Latin America with 20% and North America with 18%.
- The most active countries of Europe include: France (14% of European launches), the UK (12%) and Ireland (10%).
- Shaving preparations became the leading Shaving & Depilatories sub-category, accounting for 39% of products (being the 31% Razors and 29% Depilatory Products).

Target and claims:

- The majority (80%) of shaving preparations products were intended for men,
- The leading claims were: botanical/herbal (57%), male (52%), moisturising/hydrating (37%), dermatologically tested (32%) and ease of use (32%).

- Almost one in ten (9%) products featured either the environmentally friendly product or package claim - both seeing a small 1% increase in activity.
- 12% of launches of shaving preparations of this period were paraben-free
- The fragrance-free claim accounted for 7% of total launches of shaving preparations in 2011

ANALYSIS ON SHAVING PREPARATIONS' PACKAGING

The shares of shaving preparations are given in below table:

Table 16. Group of shaving preparations

Shaving gel*	55%
Shaving foam	27%
Shaving cream	16%
Shaving soap	2%

*All gels (including post foaming gels)

Source: Based on GNPD (Global Database of New Products) results from 2011

The materials and types of packaging used for each kind of shaving preparation were analysed. The results of this analysis are given in below tables:

Table 17. Kind of packaging and materials used in shaving foams

SHAVING FOAMS		Plated Steel	Plated aluminium	Plastic (PE, multilaminated, PP, PET)	Glass
	TOTAL	57,1%	37,7%	5,2%	0,0%
Aerosol container	92%	55,6%	36,6%	0,0%	0,0%
Bottle	5%	0,0%	0,0%	4,9%	0,0%
Can	3%	1,5%	1,1%	0,0%	0,0%
Tray	0,4%	0,0%	0,0%	0,4%	0,0%
Tube	0%	0,0%	0,0%	0,0%	0,0%

Source: Based on GNPD (Global Database of New Products) results from 2011

In orange: products using aerosols

In yellow: non-aerosol products with metal packaging

In green: non-aerosol with non-metal packaging

Table 18. Kind of packaging and materials used in shaving gels

SHAVING GELS		Plated Steel	Plated aluminium	Plastic (PE, multilaminated, PP, PET)	Glass
	TOTAL	50,0%	30,0%	20,0%	0,0%
Aerosol container	78%	49,6%	27,9%	0,0%	0,0%
Tube	18%	0,0%	0,9%	16,8%	0,0%
Bottle	4%	0,0%	1,1%	3,2%	0,0%
Can	1%	0,4%	0,2%	0,0%	0,0%

Source: Based on GNPD (Global Database of New Products) results from 2011

Table 19. Kind of packaging and materials used in shaving creams

SHAVING CREAMS		Plated Steel	Plated aluminium	Plastic (PE, multilaminated, PP, PET)	Glass
	TOTAL	6,1%	35,2%	58,8%	0,0%
Tube	76%	1,8%	25,5%	49,1%	0,0%
Aerosol container	11%	3,6%	7,3%	0,0%	0,0%
Jar	4%	0,0%	0,0%	4,2%	0,0%
Tray	4%	0,0%	1,2%	2,4%	0,0%
Bottle	3%	0,0%	0,0%	3,0%	0,0%
Others	2%	0,6%	1,2%	0,0%	0,0%

Source: Based on GNPD (Global Database of New Products) results from 2011

Table 20. Kind of packaging and materials used in shaving soaps

SHAVING SOAPS		Plated Steel	Plated aluminium	Plastic (PE, multilaminated, PP, PET)
	TOTAL	10,5%	21,1%	68,4%
Flexible	37%	0,0%	0,0%	36,8%
Tube	26%	10,5%	0,0%	15,8%
Aerosol container	21%	0,0%	21,1%	0,0%
Bottle	16%	0,0%	0,0%	15,8%

Source: Based on GNPD (Global Database of New Products) results from 2011

It can be seen that majority of shaving foams and gels are sold in aerosol containers while shaving soaps and creams are sold mainly in various kinds of plastic packaging. The most common packaging materials used for foams and gels is metal packaging – plated steel and aluminium. For shaving gels also plastics are used, although to a lower extent than metals. Shaving creams are also sold (but less commonly) in aluminium tubes. While for shaving soaps different kinds of packaging are used.

In general, if kinds of packaging and materials used for all shaving preparations are analysed together, it can be seen that plated steel, plated aluminium (see table below) and various plastics are the materials used, while aerosol container, followed by a tube and to a much lower extent bottle are the common types of packaging.

Table 21. Kind of packaging and materials used in shaving preparations

	TOTAL	Plated Steel	Plated aluminium	Plastic (PE, multilaminated, PP, PET)	Glass
	TOTAL	36,0%	36,0%	27,0%	1,0%
Aerosol	65%	35,2%	30,0%	0,0%	0,0%
Tube	24%	0,4%	4,4%	19,1%	0,0%
Bottle	8%	0,0%	0,9%	6,2%	0,9%
Can	1%	0,4%	0,6%	0,0%	0,0%
Jar	1%	0,0%	0,0%	0,7%	0,1%
Others	1%	0,0%	0,2%	1,0%	0,0%

Source: Based on GNPD (Global Database of New Products) results from 2011

In general, it has been found that:

- 72% of shaving preparations are sold in metal packaging, where:
 - ✓ 65,2% are sold using aerosol containers,
 - ✓ 6,9% are sold in different kind of packaging other than aerosol container (tube, bottle, can and others),
- 27% of shaving preparations are sold in plastic packaging,
- 1% of shaving preparations are sold in glass packaging.

BASIC ENVIRONMENTAL INFORMATION (REGARDING PACKAGING)

Shaving foams and gels usually contain **aerosol propellants** to help use the product. Chlorofluorocarbons (CFCs) are not longer used in aerosols as they are prohibited since 1987 by the Montreal Protocol on Substances that Deplete the Ozone Layer, but hydrocarbon propellant such as propane and butane are applied instead. These hydrocarbon propellants contribute to formation of low level ozone, although it should be added that aerosol packaging is not the biggest source for the formation of low level ozone. Nevertheless these emissions should be prevented as they contribute to acid rains and to the greenhouse effect. Moreover, ozone can contribute to lung tissue damage and create high incidences of asthma and allergenic reactions in humans.

According to the **Aerosol Dispensers Directive 75/324/EEC (ADD)**¹⁸, aerosol dispensers are defined as "non-reusable containers made of metal, glass or plastic and containing a gas compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state".

According to the current criterion regarding packaging set in the Commission decision for the award of the EU Ecolabel to all-purpose cleaners and sanitary cleaners¹⁹: "**sprays containing propellants must not be used**". It is proposed to consider it also for the new concerned products in the product

¹⁸ http://ec.europa.eu/enterprise/sectors/pressure-and-gas/documents/add/index_en.htm

¹⁹ Commission Decision of 28 June 2011 on establishing the ecological criteria for the award of the EU Ecolabel to all-purpose cleaners and sanitary cleaners (2011/383/EU): <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:169:0052:0064:EN:PDF>

group under study, i.e. to extend the current criterion formulation by the following requirement: **"aerosols containing hydrocarbon propellants must not be used"**.

There are alternatives available in the market for foams and sprays, which substitute these hydrocarbon propellants²⁰ using other propellant such as compressed air.

Substance of concern

Apart from the issue regarding the packaging of shaving preparations, which should be addressed in the Ecolabel criteria, the review of literature indicated one substance of concern for this kind of products: Triethanolamine²¹, which is an ingredient of shaving preparations, may trigger an allergic reaction in some individuals and thus it is considered as an ingredient of concern from the human health point of view. It is not considered an environmental hazard.

2.6 TOOTHPASTE

In this section a brief description of information related to toothpaste composition and additionally collected market and environmental data is given.

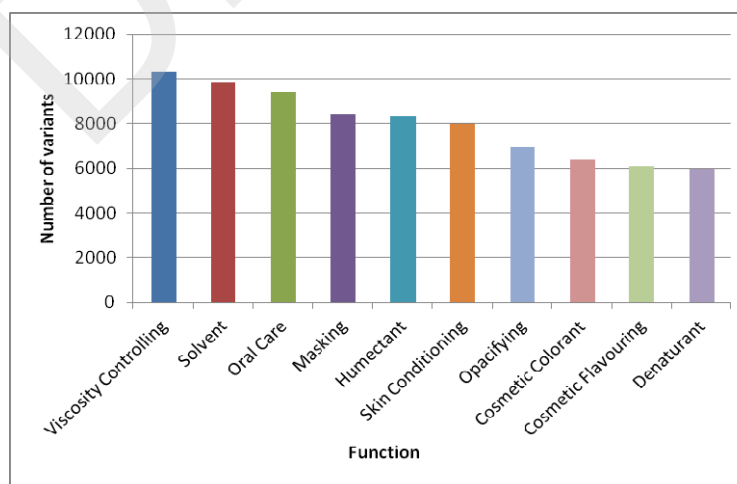
FORMULATION

4 812 products has been found and analyzed.

Raw materials

The top ingredients present in toothpaste are given below:

Table 22. Main ingredient groups contained in toothpaste



Number of variants: Number of different substances that perform the same function
Source: Based on GNPD (Global Database of New Products) results from 2011

²⁰ See e.g. article "AirOpack, a green alternative to aerosol dispensers", available online at: <http://www.premiumbeautynews.com/en/AirOpack-a-green-alternative-to,2123?checklang=1>.

²¹ Based on information contained in: Dinesen Rogers Ch., Media D., Does Shaving Cream Affect the Environment, available online at: <http://greenliving.nationalgeographic.com/shaving-cream-affect-environment-20223.html>.

Based on the Cosmetics Europe report “Cosmetic frame formulations”²² the average composition of toothpaste products is given in the below table:

Table 23. Average composition of toothpaste

TOOTHPASTE	
Ingredients	Maximum levels (% w/w)
<i>Sorbitol</i>	70
Abrasives (e.g. <i>dicalcium phosphate dihydrate</i> and/or <i>alumina</i> and/or <i>calcium carbonate</i> and/or <i>silica</i> and silicates)	55
<i>Glycerin</i>	40
Insoluble metaphosphate (IMP)	35
Ethanol (<i>alcohol, alcohol denat.</i>)	30
Sodium pyrophosphate, potassium pyrophosphate	15
PEG, PPG	10
Oral care-protecting agents (e.g. <i>strontium chloride</i>)	10
Anionic surfactants (e.g. <i>sodium lauryl sulfate</i>)	6
Viscosity controlling agents (e.g. cellulose derivatives)	5
Additional ingredients (e.g. pH stabilisers such as sodium/potassium phosphate)	5
Flavour (mostly essential oils, e.g. mint)	3
<i>Titanium dioxide</i>	2
Cosmetic colorants	1
Oral care-antiplaque (e.g. <i>zinc citrate, bromochlorophene</i>)	1
Oral care-sweetening agents (e.g. <i>saccharin</i>)	0.5
Esters of hydroxybenzoic acid	0.4
<i>Calcium glycerophosphate</i>	0.15
Fluoride compounds (calculated as Fluorine)	0.15*

* Actual weight present will depend on molecular weight of fluorine donor, e.g. 0.15% fluorine = 1.14 % MFP (monofluorophosphate) or 0.333 % NaF (*sodium fluoride*)

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

Basically, the most common active ingredients in toothpastes are:

- Fluoride: active ingredient that prevents cavities
- Antimicrobial agents that fight the bacteria of dental plaque
- Antitartar agents
- De-sensitising agents to relieve tooth sensitivity
- Abrasives
- Surfactants and foaming agents
- Other non active ingredients such as humectants, colouring thickeners, flavour, water softeners and sweeteners.

Such type of ingredients is completely different from those that can be found in soaps, shampoos and hair conditioners.

²² COLIPA GUIDELINES. Cosmetic Frame Formulations. Guidelines realized in collaboration with the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). January 2000.

The product group of soaps, shampoos and hair conditioners does not cover products that are specifically marketed for disinfecting or anti-bacterial use. Biocides are only allowed for preservation of the product, in order to avoid products that claim to be biocidal. Triclosan is an antibacterial disinfectant used widely in toothpastes. It is classified as an agent that may cause adverse environmental effects²³:

- H410: very toxic to aquatic life with long lasting effects,
- H315: causes skin irritation and H319: causes serious eye irritation.

Some studies²³ have shown that the use of triclosan in cosmetic products is also a matter of concern from a toxicological point of view. Triclosan has been found in a number of different locations, e.g. in sewage and in waste water from treatment plants indicating that use of triclosan results in exposure in the environment.

After the preliminary analysis conducted, it is proposed not to include toothpaste into the scope of the product group due to the fact that its composition differs very much from the products covered currently by the product group of "soaps, shampoos and hair conditioners".

BASIC MARKET INFORMATION

In accordance with data obtained from the GNPD Mintel Database there were 4812 toothpaste products in the European market in 2011. The five top companies producing toothpaste products are presented below:

Table 24. Top five companies producing toothpaste

Company	Number of toothpaste products
Colgate-Palmolive	779
GlaxoSmithKline	691
Schwarzkopf & Henkel	289
Procter & Gamble	255
Unilever	220

Source: Based on GNPD (Global Database of New Products) results from 2011

Main claims placed on toothpaste products are given in the below table:

²³ "Risk assessment on the use of triclosan in cosmetics" <http://vkm.no/dav/117573d6c4.pdf>.

Table 25. Main claims for toothpaste products

Claims	Percentage of total products
1. With Vitamins/Minerals	50%
2.Refreshing	27%
3.Whitening Action	24%
4.Non-specified	19%
5.Anti.bacterian	12%
6.Children (5-12)	11%
7.Botánico/Herbal	11%
8.Calcium Added	4%
9.Without Additives/Preservatives	4%
10.Children (0-4)	3%

Source: Based on GNPD (Global Database of New Products) results from 2011

Toothpaste products have usually two kinds of packaging (primary and secondary):

- a tube made of plastic or aluminium lined with a thin layer of plastic,
- external packaging (cardboard material).

The shares of various packaging materials for this product group and of the different packaging kinds are presented in tables below, where it can be seen that multi-laminated is the main material used, followed by other plastics such as PE and PP. 46% of products have secondary packaging made of cardboard.

Table 26. Packaging materials used for toothpaste

Packaging Materials	
Multi-laminated	63%
Plastic non-specified	24%
Plastic PE	6%
Aluminium	3%
Plastic PP	4%

Source: Based on GNPD (Global Database of New Products) results from 2011

Table 27. Shares of different packaging kinds for toothpaste

Kind of packaging	
Tube	91%
Bottle	8%
Aerosol	1%

Source: Based on GNPD (Global Database of New Products) results from 2011

BASIC ENVIRONMENTAL INFORMATION

Three Life Cycle Analysis and environment evaluation studies have been identified for toothpaste (listed below). The focus was mainly on the packaging material.

- Life Cycle Analysis research project for Unilever for toothpaste category (Enval, 2010). (Document non available),

- Tom's of Main toothpaste packaging: Aluminium vs. Laminate tubes. University of Michigan. 2007²⁴,
- Existing comparative LCA on toothpaste packaging SmithKline Beecham (SB)²⁵.

The main environmental concerns regarding toothpaste are related to some potential problematic chemicals used:

- Triclosan (antibiotic) may become so prevalent that bacteria found in the environment and humans will develop resistance.
- Sodium pyrophosphate (removes minerals removal and tartar build-up preventing). It contains phosphorus which contributes to excessive algal growth in waterways.
- Fluoride. Its addition is considered the single most important reason for the developed world's reduced incidence of cavities since then.

Regarding packaging, a study comparing different packaging materials for toothpaste was conducted by SmithKline Beecham²⁶. In accordance with the results obtained, it was found that traditional all-aluminium tubes have higher environmental impact compared with plastic tubes (in the study plastic barrier laminate), mainly due to the issue of raw materials consumption. This may nevertheless change if a very high level of recycling is achieved for aluminium.

2.7 PET SHAMPOOS

FORMULATION

201 products has been found and analyzed.

Raw materials

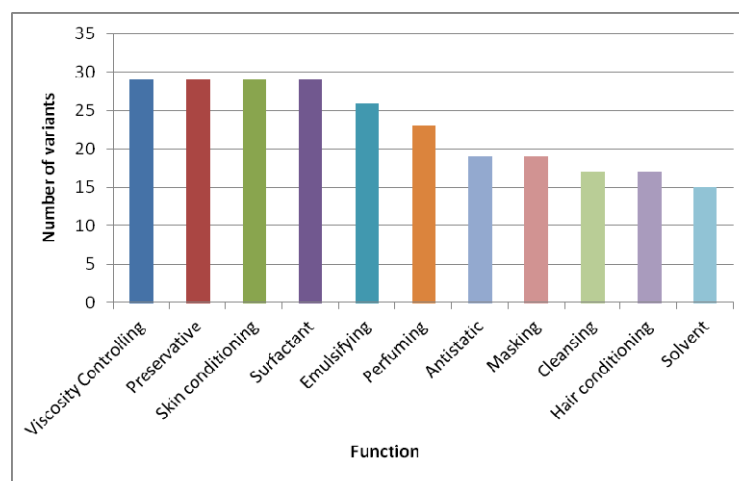
The top ingredients present in pet shampoos are below:

²⁴ A summary of the analysis conducted is available online at: <http://www.tomsomaine.com/TomsOfMaine/en-us/views/images/UniversityMichiganReport.pdf>.

²⁵ The main results of the study are available online at: http://spd.bournemouth.ac.uk/html/lca_toothpaste_and_packaging.html

²⁶ http://spd.bournemouth.ac.uk/html/lca_toothpaste_and_packaging.html

Table 28. Main ingredient groups contained in pet shampoos



Number of variants: Number of different substances that perform the same function
 Source: Based on GNPD (Global Database of New Products) results from 2011

Shampoos that are especially designed to be used for pets, commonly dogs and cats, are usually intended not only to just clean but to treat a skin condition, an allergy or to fight against parasite infestations. This is the reason why these shampoo products have special chemical composition and may contain insecticides, antibacterials, antifungals, antiseborrheic or other medications. However, the product group of soaps, shampoos and hair conditioners does not cover products that are specifically marketed for disinfecting or anti-bacterial use. Antibacterial disinfectant and microbial substances must meet the requirements for preservatives. Biocides in ecolabelled products are only allowed for preservation of the product. Products with biocidal properties are not eligible for Ecolabel since it is not permitted to add biocides other than preservatives.

However pet shampoo designed to be used only to just clean can be suitable to be included within the same group of soaps, shampoos and hair conditioners.

BASIC MARKET INFORMATION

In accordance with data obtained from the GNPD Mintel Database there were 201 pet shampoos in the European market in 2011. The five top companies producing pet shampoo products are presented below:

Table 29. Top five companies producing pet shampoos

Company	Percentage of pet shampoos
Nestlé Purina PetCare	14%
Eight in One Pet Products	12%
Greenfields Pet Products	5%
NVTS Agrovetzashchita	4%
John Paul Mitchell Systems	4%

Source: Based on GNPD (Global Database of New Products) results from 2011

Main claims placed on toothpaste products are given in the below table:

Table 30. Main claims for pet shampoos

<u>Claims</u>	<u>Percentage of total products</u>
Botanical/Herbal	29%
Ph neutral	17%
With Vitamins/Minerals	8%
Without Additives/Preservatives	7%
Skin disorders	6%

Source: Based on GNPD (Global Database of New Products) results from 2011

ENVIRONMENTAL INFORMATION

Specific environmental studies or Life cycle assessment studies on pet shampoos have not been found. However, the environmental performance of these products would be similar to shampoos, as the way of application and the release to environment (through wastewater) is the same in both cases.

Rinse-off products for animals are not covered by the cosmetics directive. Nevertheless, due to similar formulation and environmental fate they could be included in the scope, if stakeholders support this.

Such products are included in the scope of the new Nordic Swan Ecolabel for cosmetics.

2.8 WET WIPES

GENERAL CONSIDERATIONS

There are many different kinds of wipes²⁷ listed below

- Baby wipes
- Facial wipes
- Cleansing wipes
- Hand & body wipes
- Moist towelettes
- Personal Hygiene wipes
- Feminine Hygiene wipes
- Antibacterial wipes
- Medicated wipes

Currently the EU Ecolabel criteria for "Sanitary Products" are under development. For this product category, wet wipes were one of the products considered primarily as candidates to fit within the

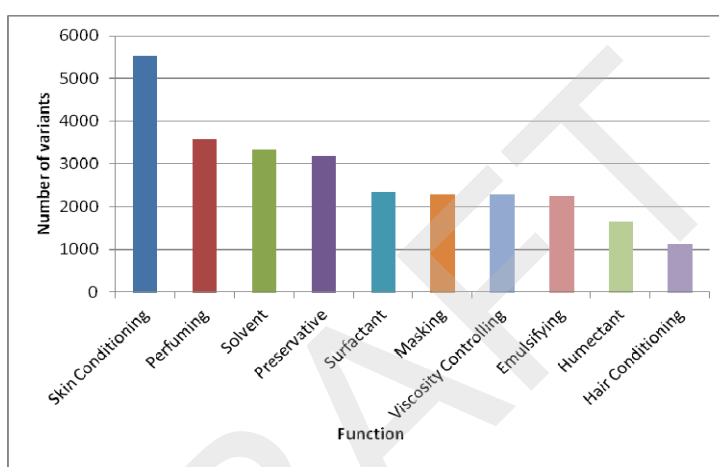
²⁷ <http://www.edana.org/>

"Sanitary Products" scope. 1st AHWG meeting regarding this development took place in June 2012 but the wipes were not included into this product group scope.

FORMULATION

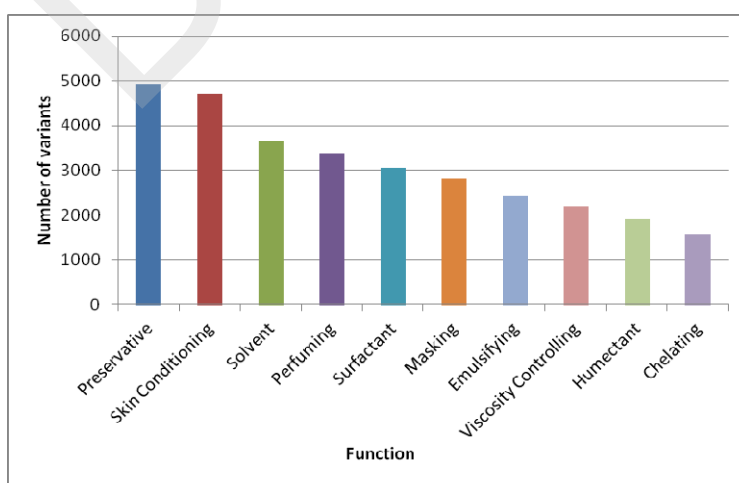
1 821 cosmetic wipes and 1 860 sanitary wipes have been found and analyzed based on the information from GNPD. The top ingredients used in wet wipes preparations are presented in tables below. The material used as support in wipes is a non-woven fabric similar to the type used in diapers and dryer sheets, containing fibres of silk, cotton, rayon, wool, and similar materials as well as plastic resins like polyester, polyethylene, and polypropylene. Additional ingredients groups used in cosmetic and sanitary wet wipes are given in below tables.

Table 31. Main ingredient groups contained in cosmetic wipes



Number of variants: Number of different substances that perform the same function
Source: Based on GNPD (Global Database of New Products) results from 2011

Table 32. Main ingredient groups contained in sanitary wipes



Number of variants: Number of different substances that perform the same function
Source: Based on GNPD (Global Database of New Products) results from 2011

Based on the Cosmetics Europe report “Cosmetic frame formulations”²⁸ the average composition of wet wipe products (excluding the wipe support material) is given in the below tables:

Table 33. Average composition of refreshing wet wipes

REFRESHING WET WIPES	
Ingredients	Maximum levels (% w/w)
Ethanol (<i>alcohol, alcohol denat.</i>)	30
Humectants, emollients (e.g. <i>propylene glycol, glycerin</i>)	10
Anionic surfactants (e.g. <i>sodium laureth sulfate</i>)	5
Non-ionic surfactants, emulsifying agents (e.g. <i>oleth-20, polysorbate 80</i>)*	5
Additional ingredients (e.g. plant extracts)	5
<i>Perfume</i>	2
Preservatives, antimicrobials	2
<i>Aqua</i>	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

*Some baby wipes do contain ethanol (*alcohol, alcohol denat.*) at 10%.

Based on the ingredients analysis from Colipa and Mintel, wet wipes were found to have a similar composition. Nevertheless, a significant difference constitutes the material used as support. Furthermore, the way of application is different from rinsed-off products and their environmental fate will also be different (i.e. they will be disposed with household waste), thus it was not proposed to include them to the current product group in this revision process.

BASIC MARKET INFORMATION

Wipes products in European Market in 2011 (GNPD Database):

- 1799 wipes in the categories of sanitary
- 2300 wipes in the categories of cosmetics

The main companies producing wipes and the main claims put on these products are presented in tables below.

Table 34. Main companies/brand (percentage of market products) of cosmetic wipes

Beiersdorf	L'Oréal	Garnier	Yves Rocher	Johnson & Johnson
15%	14%	12%	12%	10%

Source: Based on GNPD (Global Database of New Products) results from 2011

²⁸ COLIPA GUIDELINES. Cosmetic Frame Formulations. Guidelines realized in collaboration with the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). January 2000.

Table 35. Claims in wet wipes (cosmetic)

<u>Claims</u>	<u>Percentage of total products</u>
1. Botanical/Herbal	19%
2. Dermatological tested	19%
3. Cleaning	18%
4. With Vitamins/Minerals	11%
5. Moisturizing	10%
6. Sensitive Skin	6%
7. Quickness to use	5%
8. Skin Affections	5%
9. Ophthalmological tested	4%
10. Anti-Acne	4%

Source: Based on GNPD (Global Database of New Products) results from 2011

Table 36. Claims in wet wipes (sanitary)

<u>Claims</u>	<u>Percentage of total products</u>
1. For babies (0-4)	50%
2. Alcohol free	28%
3. Botanical/Herbal	28%
4. Dermatological tested	28%
5. pH-Neutral	25%
6. Practical packaging	16%
7. Hypo-allergenic	14%
8. Non-specified	14%
9. To take away	13%
10. Fragrance free	11%
Others	46%

Source: Based on GNPD (Global Database of New Products) results from 2011

PACKAGING OF WIPES

Most of products have flexible packaging format. Packages are designed to easily dispense single sheets while keeping the towelettes moist until ready for use. Main materials are given in table below. It can be seen that plastics are the main packaging material used for this kind of products.

Table 37. Main materials used in packaging of wipes

Plastics (generic)	Plastic PE	Plastic PP	Multi-laminated	Metal film	Plastic LDPE	Plastic PET	Cardboard
72%	13%	5%	4%	2%	2%	1%	2%

Source: Based on GNPD (Global Database of New Products) results from 2011

Furthermore, it is worth mentioning that only 5% of wipes products are packed in refill packs.

ENVIRONMENTAL INFORMATION

Regarding **raw materials**, wet wipes differs on the chemical composition of the support, which is usually made of a mixture of non-woven polymers and wood pulp. This mixed support is usually not biodegradable. Regarding the support, there are however some examples available on the market of biodegradable wipes which can minimize the environmental impact of these products²⁹. These wipes are made of natural fibres which come from certified sustainable sources.

Single-use products like wipes are often assumed to be worse for the environment than their reusable counterparts. EDANA (the international association serving the nonwovens and related industries) completed a Lifecycle Assessment (LCA) comparing baby wipes, washcloth and cotton balls³⁰. The results obtained show that a single-use product do not have more impact on the environment than a reusable product. The study, commissioned by the main producers of baby wipes shows different environmental impacts of baby wipes versus other cleaning methods, with no superiority on wash cloths and favourable results on the majority of indicators for the use of wipes vs. cotton balls. While single-use products have a higher impact in terms of use of raw materials and waste, they have lower impacts due to the amount of water, detergents and energy consumption comparing to other washing products and reusable towels which require washing and sometimes drying. The impact of wet wipes during **use** is much lower than of rinse-off products, since no water is needed to use wipes. These results on baby wipes could be extrapolated to cosmetic wipes.

Wipes are non-rinse-off products and they are **disposed** as solid waste after use. Regarding waste disposal, the mixture of non-woven polymers mixed with wood pulp of some wipes is not readily biodegradable. In accordance with the information obtained from the Mintel Database only 2% of cosmetic wipes analysed are biodegradable.

Due to different environmental impacts, wet wipes are not proposed for inclusion in the revised product group. Wet wipes for “cosmetic purposes” (such as facial wipes, cleansing wipes, hand&body wipes, moist towelettes) could be included in a new future category grouping non rinse-off products together with cleansing and remover make-up products.

²⁹ For more information please see the website of Kleenex: <http://www.kleenex.co.uk/UK/About/Environment.aspx>

³⁰ The executive summary of this study is available online at the EDANA website: <http://www.edana.org/Content/Default.asp?PageID=75&DocID=4482>.

2.9 CLEANSING AND REMOVER MAKE-UP PRODUCTS

FORMULATION

4 142 products has been found and analyzed.

Raw materials

The top ingredients present in cleansing and make-up remover products are below:

Table 38. Main ingredient groups contained in cleansing and remover make-up products

Skin conditioning	Surfactant
Solvent	Preservative
Perfuming	Emulsifying
Viscosity controlling	Humectant
Masking	Hair conditioning

Source: Based on GNPD (Global Database of New Products) results from 2011

Based on the report “Cosmetic frame formulations” from Colipa the average composition of cleansing and make-up remover products is as follows:

Table 39. Average composition of make-up remover

REMOVER MAKE-UP	
Ingredients	Maximum levels (% w/w)
Silicones	50
Additional ingredients (e.g. proteins, vitamins, plant extracts)	10
Preservatives, antimicrobials	0.1
Oils (e.g. paraffinum liquidum, oleyl alcohol, isopropyl myristate)	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

Table 40. Average composition of eye make-up remover

EYE REMOVER MAKE-UP	
Ingredients	Maximum levels (% w/w)
Oils (e.g. mineral)	40
Emollients, humectants (e.g. glycerin, propylene glycol)	15
Non-ionic surfactants (e.g. polysorbate 60)	6
Emulsifying agents (e.g. cetyl alcohol)	5
Viscosity controlling agents (e.g. hydroxyethylcellulose)	5
Amphoteric / cationic surfactants (e.g. betaine derivatives)	5
Preservatives, antimicrobials	2
Additional ingredients (e.g. chelating agents, plant extracts, UV filters)	1
Aqua	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

Table 41. Average composition of face mask (skin care for cleansing)

FACE MASK (SKIN CARE FOR CLEANSING)	
Ingredients	Maximum levels (% w/w)
Waxes (e.g. cera alba), oils (mineral and vegetable) and fats	90
Viscosity controlling agents (e.g. bentonite, carbomer, cellulose)	60
Humectants (e.g. glycerin, propylene glycol)	40
Fillers (e.g. starch, zinc oxide, kaolin)	30
Emulsifying agents, surfactants (e.g. glyceryl stearate, sodium laureth sulfate)	25
Ethanol (alcohol, alcohol denat.)	20
Additional ingredients (e.g. plant extracts, UV filters, antioxidants)	5
Emollients (e.g. isopropyl myristate)	5
Preservatives, antimicrobials	2
Parfum	1
Cosmetic colorants	1
Chelating agents	0.5
Aqua	to 100

Source: COLIPA GUIDELINES. Cosmetic Frame Formulations

After comparing the composition of the make-up remover, eye make-up remover and face mask with the composition of soaps and shampoos it has been seen that it is different. Additionally, the way of application is different from rinse-off products which causes that the final fate is different. Therefore, cleansing and remover make-up products are not proposed to be included in the scope of the product group.

BASIC MARKET INFORMATION

In 2011 there were 6111 make-up removal products in the European market. The main companies producing these products and main claims placed on the products are indicated in tables below.

Table 42. Main companies/brand (percentage of market products) of make-up removal products

Top 5 Companies	
Beiersdorf	17%
Yves Rocher	14%
L'Oréal	14%
Garnier	12%
Johnson & Johnson	10%

Source: Based on GNPD (Global Database of New Products) results from 2011

Table 43. Claims in make-up removal products

Claims	Percentage of total products
1. Botanical/Herbal	20%
2. Cleaning	15%
3. Dermatological tested	14%
4. Moisturizing	12%
5. With Vitamins/Minerals	8%
6. Sensitive skins	7%
7. Ethical/animals	6%
8. Without Additives/Preservatives	6%
9. Organic / Bio	6%
10. Paraben free	6%

Source: Based on GNPD (Global Database of New Products) results from 2011

PACKAGING

Most common packaging for make-up removal products (face and eyes) are given below:

Table 44. Kind of packaging used for make-up removal products

Kind of packaging	
Bottle	51%
Tube	22%
Flexible	14%
Flask	11%
Flexible bag	2%

Source: Based on GNPD (Global Database of New Products) results from 2011

Table 45. Main materials used in packaging of make-up removal products

Packaging Materials	
Plastic non-specified	38%
Plastic PE	20%
Plastic PP	16%
Plastic PET	13%
Glass	4%

Source: Based on GNPD (Global Database of New Products) results from 2011

ENVIRONMENTAL INFORMATION

Non specific studies or LCA reports for make-up removal and cleansing products have been identified.