

Survey of Chemical Substances in Consumer Products

Survey no. 10 – 2002

An investigation of chemical substances in "do it yourself" cosmetics

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Alttox A/S

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Preface

To throw light on the exposure and risks of the population in connection with chemical substances in consumer products a survey of chemical substances in “do it yourself” cosmetics is performed.

Selected recipes will be examined. In practice it will be verified how the production takes place and which hazards this might present including the exposure to chemical substances.

Raw materials for making “do it yourself” cosmetics are chemical substances or products which must be classified and labelled according to directive /9a & 9b/. If the raw materials are sold as a cosmetic kit they are covered by directive 76/768/EEC /8/. Directive 76/768/EEC /8/ does not cover raw materials sold individually.

“Do it yourself” cosmetics is defined as cosmetic products which are manufactured by private people and are not intentionally marketed as well as substances which are used in these products.

The raw materials used for “do it yourself” cosmetics have very different characters. Most of them can be used according to directive 76/768/EEC /8/ in cosmetic products, some with restrictions, but there are raw materials on the market which must not be used in cosmetic products for the public market.

Recommendation of plants and herbs in recipes for “do it yourself” cosmetics is very used in spite of the possibility that they may endure a health risk. The books about “do it yourself” cosmetics praise raw materials, plants and herbs which might cause sensitisation.

30 recipes were selected for further checking. With the selection it was an aim to cover recipes with different manufacturing methods and types of products.

The survey was started with a thorough nationwide survey of the market in retail shops, health food shops, sale via telephone, home parties and sale via the Internet. The Internet presents many possibilities for shopping also abroad. It is outside the scope of the project to cover the market abroad.

Dealers of raw materials and recipes to “do it yourself” cosmetics have read and commented on the report.

The dealers intend in the future to be more careful about the labelling of the raw materials and to provide further information about the possible risks during the making of “do it yourself” cosmetics. The recipes analysed in the report are randomly chosen. Some of the recipes are of older date and there has been an ongoing development in this area the last years. Yet the old recipes are still on the market. Therefore if you want to make your own “do it yourself” cosmetics at home, it might be a good idea to contact one of the dealers to hear if there are newer recipes available or further knowledge about the raw materials and the handling of those.

Copenhagen, December 2001.

Summary

To throw light on the exposure and risks of the population in connection with chemical substances in consumer products a survey of chemical substances in “do it yourself” cosmetics is performed.

Selected recipes will be examined. In practice it will be verified how the production takes place and which hazards this might present including the exposure to chemical substances.

“Do it yourself” cosmetics is defined as cosmetic products which are manufactured by private people and are not intentionally marketed as well as substances which are used in these products.

Raw materials for making “do it yourself” cosmetics are chemical substances or products which must be classified and labelled according to directive /9a & 9b/. If the raw materials are sold as a cosmetic kit they are covered by directive 76/768/EEC /8/. Directive 76/768/EEC /8/ does not cover raw materials sold individually.

To have a yardstick the regulations in the directive are used on “do it yourself” cosmetics to evaluate the recipes and look for warnings.

The raw materials used for “do it yourself” cosmetics have very different characters. Most of them can be used according to directive 76/768/EEC /8/ in cosmetic products, some with restrictions, but there are raw materials on the market which must not be used in cosmetic products for the public market. Recommendation of plants and herbs in recipes for “do it yourself” cosmetics is very used in spite of the possibility that they may endure a health risk. The books about “do it yourself” cosmetics praise raw materials, plants and herbs which might cause sensitisation.

Limitations for substances in cosmetic products are specified in the following annexes to directive 76/768/EEC /8/: Prohibited substances, restrictions for certain substances, permitted colouring agents, permitted preservatives and permitted UV filters.

Raw materials for “do it yourself” cosmetics are usually sold from exclusive shops and through the Internet. The market in Denmark is characterized by a limited number of dealers. Most of the raw materials are sold through a single dealer. This dealer sells directly by phone or through the Internet to private customers and to shops that choose to have the raw materials in their assortment (especially health food shops and a few toyshops).

30 recipes were selected for further checking. With the selection it was an aim to cover recipes with different manufacturing methods and types of products.

The recipes were from different sources such as library books, the Internet and in connection with buying the raw materials.

The following raw materials may be problematic. They have been a part of the criteria for selection:

- Substances not included in the INCI list.
- Substances with restrictions in directive 76/768/EEC /8/ (the user does not necessarily have knowledge about the restrictions or may not want to follow them).
- Preservatives (these might cause sensitisation and during the production process the preservatives are handled in much higher concentration than in the finished product).
- UV filters /8/

Other criteria for selection have been:

- Difficult or risky production process
- Product type characteristic of “do it yourself” cosmetics.

Some raw materials are listed in the directive 76/768/EEC /8/.

Talc, sodium hydroxide and sodium borate are listed in the annex: Restrictions for certain substances.

Carbon black (CI 77266) and blue (CI 42090) are listed in the annex: Permitted colouring agents.

Parabens and sodium benzoate are listed in annex: Permitted preservatives.

PABA is listed in annex: Permitted UV-filters.

An essential oil (oil of cactus) and the herb (lily of the valley) are not listed on the INCI list. In relation to “do it yourself” cosmetics this is of no practical use as they are not intentionally put on the market (if used in marketed open to the public products one have to apply for an INCI name for the raw materials used). Essential oils used as perfume in cosmetics product as the oil of cactus is here are only to be declared as “perfume” in the list of ingredients.

Sodium borate may damage the human ability for reproduction and is by suppliers labelled T (toxic). In Denmark it can not be sold to private persons without police permission. Private persons can not normally obtain such permission. It is first within the last year or two that sodium borate is labelled toxic, therefor it is possible that some health food shop, drysalts and a number of households have unlabelled sodium borate in their possession.

“Kønrøg” is listed as carbon black in the National Working Environment Authoritys order of carcinogenic substances/13/.

Carbon black, and other dusty materials with a content of respirable carbon black $\geq 0.1\%$ is covered by Danish legislation of carcinogenic substances /13/.

The Danish legislation of carcinogenic substances /13/ covers both commercial and private use of carbon black, while a material safety data sheet only is a demand for commercial use of carbon black. Recipe 26 does not mention that carbon black is listed as a carcinogenic substance. It is allowed to use carbon black as a colouring agent in cosmetic products /8/.

Parabens and sodium benzoate can cause sensitisation /14/.

Some essential oils may also cause sensitisation /15/.

During the manufacturing process one is exposed to these substances in concentrated form. The recipes advise one to use these substances without giving any warnings about the health hazards.

There is no information on the package of the essential oil and the soap flakes for recipe no. 28. This means that it is impossible to identify any risks regarding contact with the chemicals.

The manufacturing processes could also include physical hazards such as scalding, burning and cauterization. None of the recipes recommend use of personal protection equipment such as gloves or face protection.

This in spite of the label (C;R35) on the raw material sodium hydroxide orders use of personal protection equipment. Only one of two recipes (no. 30) gives instruction about first aid in case of skin contact but there is no instruction about first aid in case of eye contact. Sodium hydroxide can cause blindness in case of contact with the eyes.

The quality of the recipes varies a lot. They vary from being good and clear to insufficient. An insufficient recipe has no description of the manufacturing process or the raw materials. This has an influence on safety during the manufacturing process if one easier can overview the manufacturing process. In a good recipe it is possible to minimize the physical dangers because the physical dangers can be identified and prevented.

Statements like “not poisonous, “natural”, “without non-naturel synthetic scent substances” and “99-100% biodegradable” are often used. Praising like this could be illegal /9a & 9b/. As mentioned directive /9a&9b/ regulation cover the raw materials used to “do it yourself” cosmetics. If sold as a cosmetic kit they are covered with directive 6/768/EEC /8/. In this directive the rules according to which statement can be used are different. There is a possible violation of the Ministry of Health legislation when a term such as “acts against certain forms of acne and eczema” is used.

According to the marked survey half of the users are children and teenager in schools and afterschool centres. Children and teenagers are particular sensitive and easier exposed during the manufacturing process as adults. Among other things they do not have the same experience. The possible exposure as well as scalding and burning may therefor be expected to be considerable greater for children and teenager even if they are supervised by an adult.

This has uncovered a need for information to the users of ”do it yourself” cosmetics, especially schools and afterschool centres, about the risks and dangers involved in the process of making ”do it yourself” cosmetics.

1 The Market

Raw materials for “do it yourself” cosmetics are usually sold from exclusive shops and through the Internet. The market in Denmark is characterized by a limited number of dealers. Most of the raw materials are sold through a single dealer. This dealer sells directly by phone or through the Internet to private customers and to shops that choose to have the raw materials in their assortment (especially health food shops and a few toyshops).

This main dealer has stated that they have around 15 000 customers yearly of which around half are schools and institutions. The other half is independent dealers and private people for hobby use. The dealer stated furthermore that a couple of years ago there were other competitors. Today they are the only ones on the Danish market /11/.

Earlier some of the raw materials could be bought at the pharmacies but today the wholesaler demand great fees when they have to deliver small quantities of the raw materials. This means that the retail price is not competitive. The drysalts do have a limited amount of the raw materials and the customers might be lucky and find some of the raw materials there. The limited market makes it reasonable easy to survey the dealers and the raw materials the users buy.

There are two sources of raw materials to “do it yourself” cosmetics which are difficult to control. The first one is the foreign market which is easily accessible through the Internet. This market does not necessarily use the EEC rules for labelling of substances and products might probably not be provided with a label in Danish. It is outside the scope of this project to uncover this market.

The second difficult controllable source of raw materials to “do it yourself” cosmetics is plants and herbs. The books about this give many recipes for producing oils, creams and shampoos from plants and herbs found in the nature. The readers are guided to find the correct plant and how to produce cosmetics from it. Some of the plants endure a health risk and the production of cosmetics can cause serious health hazards.

Also for this market there are no regulations.

All books about “do it yourself” cosmetics praise the natural ingredients one might use for making the cosmetics. They often recommend raw materials that might cause sensitisation often without giving any warnings or remarks about the danger. Just because a raw material is natural by origin it is not necessarily without any health risks.

2 Legislation

By cosmetic products, the directive on cosmetic products /8/, means any substance or preparation intended for placing in contact with the various external parts of the human body or with the teeth and the mucous membranes of the oral cavity. The directive covers cosmetic products which are put on the market including the substances used for making them.

With starting point in the above definition this project has defined “do it yourself” cosmetics as cosmetic products which are manufactured by private persons and not intentionally put on the market as well as the substances used for this production.

The directive on cosmetic products /8/ does not regulate “do it yourself” cosmetics, unless the raw materials are sold as a cosmetic kit.

To have a yardstick the regulations in the directive are used on “do it yourself” cosmetics to evaluate the recipes and look for warnings.

Limitations for substances in cosmetic products are specified in the following annexes to directive 76/768/EEC /8/: Prohibited substances, restrictions for certain substances, permitted colouring agents, permitted preservatives and permitted UV filters.

Raw materials for making “do it yourself” cosmetics are chemical substances or products which must be classified and labelled according to directive 92/32/EEC and 88/379/EEC /9a & 9b/. If the raw materials are sold as a cosmetic kit they are covered by directive 76/768/EEC /8/. Directive 76/768/EEC /8/ does not cover raw materials sold individually.

The general nomenclature for cosmetic ingredients appears on the INCI list (International Nomenclature of Cosmetic Ingredients).

The INCI list is divided in two parts, the one part deals with the perfumes and aromatic raw materials and the other part all the other substances. The list is only a guide but does not make up a total list of permitted ingredients for cosmetic products.

3 Methods to select the recipes

To throw light on the exposure and risks of the population when making and using “do it yourself” cosmetics 30 recipes were selected for further checking. With the selection it was an aim to cover recipes with different manufacturing methods and different types of products.

The recipes were from different sources such as library books, the Internet and in connection with buying the raw materials. All recipes were registered with names, product type, and date for receiving it and source/origin (see below).

All used raw materials were registered with trade name, INCI name, date, bar code, batch number, CAS number, classification and description (annex 1).

The following raw materials may be problematic. This has also been a part of the criteria for selection:

- Substances not included in the INCI list.
- Substances with restrictions in directive 76/768/EEC /8/ (the user does not necessarily have knowledge about the restrictions or may not want to follow them).
- Preservatives (these might cause sensitisation and during the production process the preservatives are handled in much higher concentration than in the finished product).
- UV filters /8/

Other criteria for selection have been:

- Difficult or risky production process
- Product type characteristic of “do it yourself” cosmetics.

3.1 Product type

The recipes were divided in 13 types of products depending on the type of cosmetics. The recipes 1, 6, 12, 17, 20, 28 and 30 were produced. Analysing these recipes it was possible to make conclusions by analogy for the rest which were not produced. Recipes 1, 6, 12 and 17 were purchased as a complete kit, whereas the raw materials for 20, 28 and 30 were purchased individually.

3.1.1 Recipes no. 1 – 30

	<i>Cream (water in oil)</i>	<i>Date of purchase</i>	<i>Litt.source</i>
Recipe no. 1	Rosen - lanolincreme	20.10.01	/10/
Recipe no. 2	Abrikoscreme	29.10.01	/1/
Recipe no. 3	Sollotion med kakao	29.10.01	/1/
Recipe no. 4	Hyldeblomstcreme	17.10.01	/5/
Recipe no. 5	Solbeskyttelse	17.10.01	/3/
	<i>Cream (oil in water)</i>		
Recipe no. 6	Kaktusfugtighedscreme	20.10.01	/10/
Recipe no. 7	Body lotion	17.10.01	/5/
Recipe no. 8	Body lotion med fugtighedsbinder	31.10.01	/6/
	<i>Gelé</i>		
Recipe no. 9	Rosmaringelé	17.10.01	/4/
	<i>Perfume/Aroma</i>		
Recipe no. 10	Fantasia	17.10.01	/4/
Recipe no. 11	Liljekonvalessens	17.10.01	/4/
	<i>Ointment (without vand)</i>		
Recipe no. 12	Læbepomade	20.10.01	/10/
Recipe no. 13	Solcreme Hawaii	17.10.01	/4/
Recipe no. 14	Salve	31.10.01	/6/
	<i>Skintonic</i>		
Recipe no. 15	Skintonic	17.10.01	/3/
Recipe no. 16	Orangetonic	17.10.01	/4/
	<i>Shampoo</i>		
Recipe no. 17	Æbleblomstshampoo	20.10.01	/10/
Recipe no. 18	Silkeshampoo	17.10.01	/5/
Recipe no. 19	Saponinshampoo	17.10.01	/4/
	<i>Toothpaste</i>		
Recipe no. 20	Tandpasta	06.11.01	/10/
Recipe no. 21	Tandpulver til rygere	17.10.01	/4/
	<i>Hairtone</i>		
Recipe no. 22	Lyst hår	17.10.01	/4/
	<i>Deodorant</i>		
Recipe no. 23	Roll-on	17.10.01	/5/
	<i>Bathsalt/oil</i>		
Recipe no. 24	Appelsinblomstvand m. boraks	29.10.01	/1/
Recipe no. 25	Badeolie	17.10.01	/4/
	<i>Make-up</i>		
Recipe no. 26	Mascara	17.10.01	/4/

Recipe no. 27	Øjenskyggefårve, blågrå	17.10.01	/4/
	<i>Soap</i>		
Recipe no. 28	Sæbemasse	01.11.01	/10/
Recipe no. 29	Billig og nem håndsæbe med oksetælle	31.10.01	/6/
Recipe no. 30	Brun sæbe	21.11.01	/4/

4 The Produktion

To the production recipes from the following type of products were chosen: Creme (water in oil), creme (oil in water), ointment (without water), shampoo, toothpaste and soap. Other recipes were hereafter compared and a conclusion by analogy was drawn on the basis of the produced recipes, dealers' direction and property of the raw materials.

The production took place after an ordered recipe which was followed strictly with regard to equipment, raw materials and procedure. Also the place of production was simulated as far as possible, assuming that the consumer would use a private kitchen and not a modern laboratory fully equipped with fume cupboard, personal protective equipment and technical tools.

One person took care of the production while two other observed and noted possible inconveniences and other relevant observations.

5 Study of the recipes

5.1 Foreword to the recipes 1-30

Analysing the 30 recipes contains the following points:

Comprehensibility and utility of the direction

This evaluates how clear and easy it is to read and understand the direction. Supplementary information about the used raw materials and how useful the direction is, including the risks that lie in the production of the cosmetic product, are also looked at here.

“Direction” is to be understood as a comprehensive term (it covers from how one would produce “do it yourself” cosmetics, to the possible safety advises).

Packing

This evaluates if the packing of the raw materials is suitable, and if it is limiting the risk of contact, or other danger to health before production takes place.

The evaluation is only made for the bought raw materials to the produced recipes and no evaluation can be made.

Labelling of the raw materials

This evaluates if the raw material is labelled appropriate for the user. Can one find any relevant information about the raw material and what information is missing? The evaluation is only made for the bought raw materials to the produced recipes, and the section is left out when the conclusion is made by analogy.

Observations during the production

This is evaluated what risks can arise from the production process. Many of the observations are made by analogy, which are found by analysing the direction and comparing with a recipe that was produced.

Risk assessment of the exposure to the raw materials

This evaluates if contact with the raw materials has an unhealthy effect and if there is any exposure during production. If that is the case, the effect is described.

It is mentioned if the direction, or the supplier of the raw material, has drawn attention to safety instructions for the use, according to the directive on cosmetic products /8/.

The finished product

This evaluates if the direction has recommendations for the finished product. Also durability of the finished product is brought in focus, there can be requirements according to the directive on cosmetic products /8/.

Cosmetic products have to be labelled with an expiry date if valid less than 30 month.

It is also mentioned if any storage conditions for the finished product are specified.

Discussion

This is a summary of the most essential information from the above mentioned points, and a complete evaluation for the recipe is made.

Raw materials marked with (*) are mentioned in the directive on cosmetic products for permitted substances with restrictions in cosmetic products /8/.

Recipe 1-30 is looked through for these substances and they are mentioned below with the name of the raw material (their name on the list for substances with restrictions) and their restrictions:

Sodium borate: 18% (calculated as boric acid, w/w). Must not be used in products for children under 3 year of ages.

Suppliers has *classified* sodium borate to have an affect on reproduction, Rep2;R60 Rep3;R63.

Sodium benzoate (benzoic acid): 0,5% (acid)

Paraben:

Methylparaben/propylparaben (4-hydroxicbezoic acid): 0,4% (acid) for one ester and 0,8% (acid) for a mixture of esters.

Phenoxyethanol (Phenoxyethanol): 1,0%

The supplier states on the label of the parabens that “0,5% has to be used in all water containing products”. The concentration of the parabens is not known, and therefor it is not possible to calculate the concentration in the final product.

4-aminobenzoesyre (PABA): 5%

Talkum (Talc): In powdered products for children under 3 years of ages it must not come into contact with nose or mouth of the child.

Natriumhydroxid (sodium hydroxide): Other use as pH-regulator: Is only allowed to be used to regulate pH to a maximum of 11.

Substances marked with (#) are established to be harmful to the health, but they are not included by the restrictions in the directive on cosmetic products /8/. The relevant substances are:

Essential oils: Are mentioned with the general assumption that they might cause sensitisation by skin contact or inhalation.

Lanolin: In the recipes it is mentioned as an allergen.

Misleading statements, according to directive 92/32/EEC and 88/379/EEC /9/, are often used in the recipes. Here “do it yourself” cosmetics and the used raw materials are praised with words like “non-poisonous”, “natural” and “non-dangerous”.

Recipe no. 1

Rosen - lanolincremé (rose - lanolin cream)

Comprehensibility and utility of the direction

Easy to read and with many details.

Good layout with good headings.

Relevant information about most of the raw materials used.

Packing

The parabens is in a dropping bottle so the solution can be dosed drop by drop.

Labelling of the raw materials

Clear labelling with INCI names, batch no., nominal content and a short description of the raw materials.

The concentration of the paraben solvent is not given.

Observations during the production

When stirred some slashing might occur. Therefore use of a high walled cooking pot is recommended.

It is difficult to get the lanolin out of its package.

The rose oil is in a small tube and gets in contact with skin when opened.

Risk assessment of the exposure to the raw materials

Lanolin can cause sensitisation and this is stated in the direction.

Also the parabens and the rose oil can cause sensitisation. This is not mentioned in the direction.

The finished product

Durability for the finished product is given in the direction.

It is possible to buy containers to store the product as well as labels for labelling of the finished product.

Discussion

Good layout of the direction which makes it simple to make the product. The packages with raw materials are very suitable and clearly labelled but the concentration of the paraben* solution is missing.

There are few risks during the production.

Lanolin#, parabens* and the rose oil# can possibly cause sensitisation to which one are exposed to during the production.

One has to use 5 ml paraben*. Some might choose to remove the dropping lid in order to get the liquid out faster which increases the possible risk of exposure. One gets in contact with the rose oil when opening the small tube.

Statements like “nonpoisonous” or “natural” are being used. These statements could be illegal (article 23(4) in 92/32/EEC)/9a/.

Recipe no. 2

Abrikoscreme (apricot cream) (conclusion by analogy)

Comprehensibility and utility of the direction

Practical illustrations of the needed tools for production.

No information about the raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Uncertain specifications of amounts such as “pinch”.

Uncertain specifications of temperature such as “just below the boiling point”.

In the list of raw materials needed the chemical name is given for the preservative.

Later in the direction it is only written preservative.

An unknown amount of glycerol needed - not mentioned in the list of raw materials.

Packing

No evaluation.

Observations during the production

When stirred some slashing might occur. Therefore use of a high walled cooking pot is recommended.

Risk for scalding when the oil and water phase are whipped with an electrical whisk.

Risk assessment of the exposure to the raw materials

Sodium benzoate and apricot oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability is given in the direction but there is a recommendation for storage conditions.

Discussion

Uncertain direction which has no information about the risks during the production process (splashing and scalding). There is no information about the possible risk of sensitisation from the exposure to sodium benzoate* or the apricot oil#.

Recipe no. 3

Sollotion (sun lotion) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Uncertain specifications of amounts such as “pinch”.

Uncertain specifications of temperature such as “heat the liquid”.

In the list of raw materials needed the chemical name is given for the preservative later in the direction is only written preservative.

No information about the use of the lotion. Is it to be used before or after sun bathing?

Packing

No evaluation.

Observations during the production

When stirred some slashing might occur. Therefore use of a high walled cooking pot is recommended.

Risk for scalding when the oil and water phase are whipped together with an electrical whisk.

Risk assessment of the exposure to the raw materials

Sodium benzoate and the flower extracts can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability is given in the direction but there is storage conditions.

Discussion

Uncertain direction which has no information about the risks during the production process (splashing and scalding). There is no information about the possible risk of sensitisation from the exposure to sodium benzoate* or from the extracts#.

Recipe no. 4

Hyldeblomstcremé (elder flower cream) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used e.g. M-V-fat and V-E-fat.

No reference to possible dealers of neither raw materials nor containers.

Uncertain specifications of amounts such as “pinch”.

No information on which type of oil to use (“2 tablespoonful oil”).

The font is difficult to read.

Packing

No evaluation.

Observations during the production

When stirred some slashing might occur. Therefore use of a high walled cooking pot is recommended.

Risk for scalding when the oil and water phase are whipped together with an electrical whisk.

Risk assessment of the exposure to the raw materials

Sodium benzoate and lanolin can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

Uncertain direction which has no information about the risks during the production process (splashing and scalding). There is no information about the possible risk of sensitisation from the contact with sodium benzoate* or the lanolin#.

Recipe no. 5

Solbeskyttelse (sun blocker) (conclusion by analogy)

Comprehensibility and utility of the direction

Difficult to read the direction as it is split in making the cream and the sun blocking liquid.

Misleading praise of PAPA.

Packing

No evaluation.

Observations during the production

When stirred some slashing might occur. Therefore use of a high walled cooking pot is recommended.

Risk assessment of the exposure to the raw materials

No unhealthy effects were found.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

PABA* is praised for being "harmless". This statement could be illegal (article 23(4) in 92/32/EEC)/9a/.

According to directive 76/768/EEC /8/ cosmetic product may contain up to 5% w/w.

Recipe no. 6

Kaktus - Fugtighedscremé (cactus moisturizer)

Comprehensibility and utility of the direction

Easy to read and with many details.

Good layout with good headings.

Relevant information about most of the raw materials used.

Packing

The parabens is in a dropping bottle so the solution can be dosed drop by drop.

Labelling of the raw materials

Clear labelling with INCI names, batch no., nominal content and a short description of the raw materials. The concentration of the paraben solvent is not given.

Observations during the production

Air enters the cream easily during the mixing of the water and fat phase because the water phase is larger than the fat phase. This results in a non-homogeneous cream which easily can be contaminated with bacteria and dirt.

When stirred some slashing might occur. Therefore use of a high walled cooking pot is recommended.

The cactus oil is in a small tube and gets in contact with skin when it is opened.

Risk for scalding when the oil and water phase are whipped together.

Two persons are needed for the production, as you have to whip at the same time as you pour from the pot.

Risk assessment of the exposure to the raw materials

Cactus oil can cause sensitisation and this is stated in the direction.

Also the parabens can cause sensitisation. This is not mentioned in the direction.

The finished product

Durability for the finished product is given in the direction.

It is possible to buy containers to store the product as well as labels for labelling of the finished product.

Discussion

Good layout of the direction which makes it simple to make the product. The packages with raw materials are very suitable and clearly labelled but the concentration of the paraben* solution is missing.

The parabens* and the cactus oil# can possibly cause sensitisation to which one are exposed to during the production.

One have to use 5 ml paraben*. Some might choose to remove the dropping lid in order to get the liquid out faster which increases the possible risk of exposure. One get in contact with the cactus oil when opening the small tube.

A statement like “without non-natural synthetic scent substances” is being used about the raw material. This statement could be illegal (article 23(4) in 92/32/EEC)/9a/.

Recipe no. 7

Bodylotion (body lotion) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used e.g. M-V-fat and V-E-fat.

Easy to read and with many details.

No reference to possible dealers of neither raw materials nor containers.

Uncertain specifications of “stearin” which probably is a mixture of two fatty acids.

Uncertain specifications of amounts such as “pinch”.

The font is difficult to read.

Packing

No evaluation.

Observations during the production

Air enters the lotion easily during the mixing of the water and fat phase because the water phase is larger than the fat phase. This results in a non-homogeneous cream which easily can be contaminated with bacteria and dirt.

When stirred some slashing might occur. Therefore use of a high walled cooking pot is recommended.

Two persons are needed for the production, as you have to whip at the same time as you pour from the pot.

Risks when exposed to the raw materials

Sodium benzoate and the essential oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

There is no information about the possible risk of sensitisation from the exposure to sodium benzoate* or from the essential oil#.

Recipe no. 8

Bodylotion med fugtbinder (body lotion with moisture binder) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used e.g. M-V-fat and V-E-fat.

Packing

No evaluation.

Observations during the production

Air enters easily into the lotion during the mixing of the water and fat phase because the water phase is larger than the fat phase. This results in a non-homogeneous cream which easily can be contaminated with bacteria and dirt. When stirred some slashing might occur. Therefore use of a high walled cooking pot is recommended.

Two persons are needed for the production, as you have to whip at the same time as you pour from the pot.

Risks when exposed to the raw materials

Parabens and the essential oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

There is no information about the possible risk of sensitisation from the exposure to sodium benzoate* or from the essential oil#.

Recipe no. 9

Rosemaringelé (rosemary gel) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used.
No reference to possible dealers of neither raw materials nor containers.
Uncertain specifications of which alcohol to use.
Uncertain specifications of temperature such as “cool a little”.

Packing

No evaluation.

Observations during the production

When the hot mass is bubbling during the heating there is a risk of scalding.

Risk assessment of the exposure to the raw materials

The essential oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

There is no information about the possible risk of sensitisation from the exposure to the essential oil#.

Recipe no. 10

Fantasia (perfume/flavour) (conclusion by analogy)

Comprehensibility and utility of the direction

Simple direction for producing the cosmetic product.

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

The essential oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

There is no information about the possible risk of sensitisation from the exposure to the essential oil#.

Recipe no. 11

Liljekonvalessens (lily of the valley essence) (conclusion by analogy)

Comprehensibility and utility of the direction

Poor illustration of a lily of the valley if one use that for finding the flowers in nature.

It is mentioned that the flowers are poisonous if one eats them or drinks the extracts.

No reference to possible dealers of neither raw materials nor containers.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

Lily of the valley is poisonous to consume.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

Lily of the valley is poisonous to consume which ought to be mentioned on the label for the essence.

There is a certain risk that children or adults might consume a bit of the product.

The direction ought to mention that the product must be labelled so that the liquid is not consumed by accident.

Recipe no. 12

Læbepomade (lip ointment)

Comprehensibility and utility of the direction

Easy to read and with many details.

Missing information about tools to produce the product in a correct way (thermometer and heat proof beaker or stainless steel cooking pot).

Packing

No evaluation.

Labelling of the raw materials

Clear labelling with INCI names, batch no., nominal content and a short description of the raw materials.

Observations during the production

The karite nut butter is not in a suitable package. It sticks to the plastic bag and this can not be completely emptied. This leads to skin contact with the butter.

The form and the colour of packages in which the lip salves are moulded makes it difficult to fill. This leads to a possible risk for burning ones fingers and at the same time to large spill. The handling requires a base so the worktop does not get spoiled during the production.

The prescription recommend to use a jam jar in a water bath. This might lead to scalding because of buoyancy which might get the jar to turn over.

Two persons are needed for the production, as you have to whip at the same time as you pour from the pot.

Risk assessment of the exposure to the raw materials

No unhealthy effects were found.

The finished product

No durability or storage conditions are mentioned in the direction.

It is possible to buy containers to store the product as well as labels for labelling of the finished product.

Discussion

Lip ointment is difficult to make and therefor the production can lead to risks for scalding and burning.

The producer must read the direction carefully before starting the production in order to avoid the risks and have the correct tools.

Recipe no. 13

Solcreme Hawaii (sun cream) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Effect 1 and 3 refers to the use of sun cream which is mentioned in the book /4/.

Packing

No evaluation.

Observations during the production

15 drops of bergamot oil is difficult to measure if the bottle does not have a dropping lid.

Risk assessment of the exposure to the raw materials

The essential oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

There is no information about the possible risk of sensitisation from the exposure to the essential oil#. Bergamot oil is also phototoxic.

Recipe no. 14

Salve (conclusion by analogy)

Comprehensibility and utility of the direction

Relevant information about a few of the raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Uncertain specifications of amounts such as “pinch”.

Uncertain specifications of temperature such as “nearly cool”.

Packing

No evaluation.

Observations during the production

When stirred some slashing might occur. Therefore use of a high walled cooking pot is recommended.

It is difficult to get the lanolin out of its package.

A pinch is difficult to measure.

Risk assessment of the exposure to the raw materials

Lanolin, camphor and tea tree essential oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

Relative good direction but there is no information about the possible risk of sensitisation from the exposure to the lanolin#, camphor# and tea tree# essential oil.

The direction mention that it is possible “to add various active substances”:

“15 drops of carotene, provitamin A for against eczema”.

“15 drops of azulene, impedes inflammation”.

“40 drops of tea tree oil also impedes fungi”.

This can be considered as a violation of the Ministry of Health legislation.

Recipe no. 15

Skintonic (skin tonic) (conclusion by analogy)

Comprehensibility and utility of the direction

There is information about the raw materials which can be used.
No reference to possible dealers of neither raw materials nor containers.
Relevant considerations about the use of the finished product.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

The risk is unknown as one has to choose both a oil and a plant tincture. These can cause sensitisation and other health hazards which is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

The direction lets the user choose the correct raw materials. This is a hazardous way of making a direction. One has to find the information about the harmful effects of the raw materials.

There is no information about the possible risk of sensitisation from the exposure to the essential oil#.

Recipe no. 16

Orangetonic (orange tonic) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Uncertain specifications of amounts such as “a little of boiling water”.

No information about which tools to use.

Packing

No evaluation.

Observations during the production

It is possible to get in touch with the raw material when one has to measure a stroken teaspoon.

Risk of scalding when heating a little amount of water.

Risk assessment of the exposure to the raw materials

Sodium benzoate may cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

Plain direction but there is no information about the possible risk of sensitisation for contact with sodium benzoate*.

Recipe no. 17

Æbleblomstshampoo (apple flower shampoo)

Comprehensibility and utility of the direction

Easy to read and with many details.

Relevant information about most of the raw materials used.

Uncertainty: The raw material “Sulfat” (sulphate) is called both sulphate and sulphate soap in the direction.

Packing

Good packages which reduce the risk of contact with the raw materials during production.

Labelling of the raw materials

Clear labelling with INCI names, batch no., nominal content and a short description of the raw materials. The name “sulfat” is ambiguous. The used sulphate contains mipa-laureth sulfate and cocamidopropyl betaine.

Observations during the production

The cooking pot shall be able to contain more than 3.5 litre and there is a risk of scalding skin while scalding the tools.

Risk of scalding when filtering the boiling water. The funnel has to be placed secure when filled with hot water so it does not overturn.

Risk assessment of the exposure to the raw materials

Apple blossom oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

It is possible to buy containers to store the product as well as labels for labelling of the finished product.

Discussion

Good layout and a detailed direction. There is no information about the possible risk of sensitisation from the exposure to apple blossom oil#.

Statements like “non-natural synthetic substances” and “is 99-100% biological degradable” are being used. These statements could be illegal (article 23(4) in 92/32/EEC)/9a/ because it is according to a raw material.

Recipe no. 18

Silkshampoo (silk shampoo) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Uncertainty: The name "sulfat" (sulphate) is ambiguous.

The font is difficult to read.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

No unhealthy effects were found.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

The direction contains very little information.

Recipe no. 19

Saponin-shampoo (conclusion by analogy)

Comprehensibility and utility of the direction

No direction.

No information about the individual raw materials used.

No list of raw materials.

No reference to possible dealers of neither raw materials nor containers.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

No unhealthy effects were found.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

Praising statement: "Everything which is called something with sulphate is easily biological degradable in the nature".

Recipe no. 20

Tandpasta (toothpaste)

Comprehensibility and utility of the directions

No information about the individual raw materials used.

No list of raw materials.

Packing

Good packages which reduce the risk of contact with the raw materials during production.

Labelling of the raw materials

Clear labelling with INCI names, batch no., nominal content and a short description of the raw materials.

Uncertainty: The name "sulfat" (sulphate) is ambiguous. The used sulphate contains mipa-laureth sulfate and cocamidopropyl betaine.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

Peppermint oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

It is possible to buy containers to store the product as well as labels for labelling of the finished product.

Discussion

There is no information about the possible risk of sensitisation from the exposure to peppermint oil#.

Recipe no. 21

Tandpulver til rygere (tooth powder for smokers) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used.

No description of production procedure.

No reference to possible dealers of neither raw materials nor containers.

There is a warning “not for daily use” but no explanation to this warning.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

Peppermint and clove oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

There is no information about the possible risk of sensitisation from the exposure to peppermint and clove oil#.

Pumicestone in the toothpowder grinds the dentine and should only be used a couple of times a year.

Recipe no. 22

Lyst hår (blond hair) (conclusion by analogy)

Comprehensibility and utility of the direction

No list of raw materials.

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Uncertain specifications of temperature "heat a little".

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

No unhealthy effects were found.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

The direction contains very little information.

Recipe no. 23

Roll-on deodorant (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used.
No reference to possible dealers of neither raw materials nor containers.
The language used is confusing as it use a mixture of “small” and “little”.
The font is difficult to read.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

Parabens and essential oils can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

There is no information about the possible risk of sensitisation from the exposure to parabens* and essential oils#.

Recipe no. 24

Appelsinblomstvand (orange flower water) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Uncertain specifications of temperature "heat the water".

Packing

No evaluation.

Observations during the production

Risk of scolding when one whisk in the hot water.

Risk assessment of the exposure to the raw materials

Sodium borate may impair fertility and is a possible risk for the unborn child: The supplier has classified sodium borate to Repr. Cat.2;R60 Repr.Cat.3;R63 (article 6 in 92/32/EEC)/9a/.

Orange flower oil may cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

Sodium borate is by suppliers classified as toxic and can not be sold to private persons without police permission. Private persons can not normally obtain such permission.

There is no information about the possible risk of sensitisation from the exposure to orange flower oil#.

Recipe no. 25

Badeolie (bath oil) (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

Pine needle oil can cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

There is no information about the possible risk of sensitisation from the exposure to pine needle oil#.

The direction mentions that “bath oil” is “effective against some forms of acne and eczema”. This can be considered as a violation of the Ministry of Health legislation.

Recipe no. 26

Mascara (conclusion by analogy)

Comprehensibility and utility of the direction

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

The font is difficult to read.

Old-fashioned name for the black pigment which many people do not know.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

No unhealthy effects were found.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

“Kønrøg” is listed as carbon black in the National Working Environment Authority's order of carcinogenic substances /13/.

Carbon black (CI 77266), and other dusty materials with a content of respirable carbon black $\geq 0.1\%$ is covered by Danish legislation of carcinogenic substances /13/. The production of mascara means that one spoonful carbon black has to be handled in powder form. The part of the process where carbon black is as dust, is covered by Danish legislation of carcinogenic substances /13/, whether it is carried out by teachers in schools or institutions, or by children and teenagers.

The general rules laid down by the order /13/ have to be followed among those the waste in powder form must be labelled with a yellow label with the warning:

“Contains a substance regulated by Danish legislation about dealing with carcinogen substances”. The written argumentation from the employer for using a carcinogen substance only has to be made for companies with employees e.g.

If carbon black is sold/distributed to commercial use, a material safety data sheet in 16 points has to be delivered. The rule does not apply when privates buy carbon black.

In summary, the Danish legislation of carcinogenic substances /13/ covers both commercial and private use of carbon black, while a material safety data sheet only is a demand for commercial use of carbon black.

The recipe does not mention that carbon black is listed on the Danish list of carcinogenic substances.

Recipe no. 27

Øjenskygge blågrå (eye shadow blue/grey) (conclusion by analogy)

Comprehensibility and utility of the direction

No instruction for production, only a list of raw materials.

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Insufficient names for the blue and black pigments therefor many people will not know what to buy.

Packing

No evaluation.

Observations during the production

No risk was found.

Risk assessment of the exposure to the raw materials

Talc can in powder form be harmful.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

Insufficient direction that only lists the raw materials needed.

There is no warning against talc* and no direction of its possible health risk. Talc is only a risk in powder form and not as an ingredient in a non-powder product.

Recipe no. 28

Sæbemasse (toilet soap)

Comprehensibility and utility of the direction

Name of the dealer is mentioned.

Warning against letting children work with the production without the presence of an adult.

No list of raw materials nor information about the raw materials.

Packing

The dropping lids on the colour and perfume bottles only allow small amounts to pass through.

Labelling

No labelling or description of the colour or perfume.

Observations during the production

The concentrated blue colour is colouring the skin and can not be washed away with water.

It is an easy production method to use a microwave oven for melting the soap mass but it is difficult to measure the temperature at the same time. Using a microwave oven also makes the mass foam a little which the direction advice against.

Risk of scalding when pouring the soap mass into the mould.

Risk assessment of the exposure to the raw materials

It is not known if the colour is a health risk but it colours the skin a couple of days.

The perfume might cause sensitisation. This is not mentioned in the direction.

The finished product

No durability or storage conditions are mentioned in the direction.

Discussion

A compact direction and no labelling of the raw materials.

There is no information about the possible risk of sensitisation from the exposure to the perfume#.

Recipe no. 29

Billig og nem håndsæbe med oksetælle (cheap and easy toilet soap) (conclusion by analogy)

Comprehensibility and utility of the direction

Difficult to produce.

A long direction.

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

Wrong use of the Danish word “soda”. Soda is sodium carbonate and not sodium hydroxide.

Tools needed are not mentioned.

Packing

No evaluation.

Labelling

Sodium hydroxide was labelled C;R35 S(1/2)-26-37/39-45.

R 35: Causes severe burns.

S 1/2: Keep locked up and out of the reach of children.

S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39: Wear suitable gloves and eye/face protection.

S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

The sodium hydroxide bought was missing the word “face” in S 37/39.

Observations during the production

The production is difficult. The fat does not melt completely and it contains remains of meat which has to be strained away.

During the melting process the fat splashes out of the cooking pot and might cause burns.

Great risk of contact with the sodium hydroxide (causes severe burns) as well as possibility for harms to wooden worktops, especially when making a water solution of it.

When the sodium hydroxide solution is added to the fat the mixture it might bobble up and might bobble over from the pot. Again there is a risk of severe burns.

A big high walled cooking pot is recommended to prevent splashing.

Risk assessment of the exposure to the raw materials

Sodium hydroxide can cause severe burns and there is a high risk during the production to get in contact with the sodium hydroxide.

Essential oils might cause sensitisation. This is not mentioned in the direction.

The finished product

pH of the product need to be measured as there might be a surplus of sodium hydroxide if there is too little fat to complete the saponification.

No durability or storage conditions are mentioned in the direction.

Discussion

The direction is not detailed enough and there are many risks during the production phase (scalding and severe burns). There are no warnings against the risks and no suggestion for personal protection equipment.

A guide to chemical protection clothing /7/ recommend to use gloves of e.g. Natural Rubber or Nitrile Rubber when working with sodium hydroxide*.

There is no information about the possible risk of sensitisation from the exposure to essential oils#.

Recipe no. 30

Brun sæbe (soft soap)

Comprehensibility and utility of the direction

No information about the individual raw materials used.

No reference to possible dealers of neither raw materials nor containers.

No instruction for production of such a hazardous production.

In the direction one is referred to another recipe for producing soap. This recipe gives warnings against the hazards and what kind of first aid to use in case of an accident. This recipe is not included here as it is very much the same as recipe 29.

Packing

No evaluation.

Labelling

Sodium hydroxide was labelled C;R35 S(1/2)-26-37/39-45.

R 35: Causes severe burns.

S 1/2: Keep locked up and out of the reach of children.

S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39: Wear suitable gloves and eye/face protection.

S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

The sodium hydroxide bought was missing the word "face" in S 37/39.

Observations during the production

The production is difficult. The fat does not melt completely and it contains remains of meat which has to be strained away.

During the melting process the fat splashes out of the cooking pot and might cause burns.

Great risk of contact with the sodium hydroxide (causes severe burns) as well as possibility for harms to wooden worktops, especially when making a water solution of it.

When the sodium hydroxide solution is added to the fat the mixture might bobble up and might bobble over from the pot. Again there is a risk of severe burns.

A big high walled cooking pot is recommended to prevent splashing.

Risk assessment of the exposure to the raw materials

Sodium hydroxide can cause severe burns and there is a high risk during the production to get in contact with the sodium hydroxide.

The finished product

pH of the product needs to be measured as there might be a surplus of sodium hydroxide if there is too little fat to complete the saponification.

No durability or storage conditions are mentioned in the direction.

Discussion

The direction is not detailed enough and there are many risks during the production phase (scalding and severe burns). There are no warnings against the risks and no suggestion for personal protection equipment.

A guide to chemical protection clothing // recommend to use gloves of e.g. Natural Rubber or Nitrile Rubber when working with sodium hydroxide*.

6 Discussion

The 30 selected recipes had very different problems.

Some raw materials are listed in the directive 76/768/EEC /8/.

Talc, sodium hydroxide and sodium borate are listed in the annex: Restrictions for certain substances.

Carbon black (CI 77266) and blue (CI 42090) are listed in the annex: Permitted colouring agents.

Parabens and sodium benzoate are listed in the annex: Permitted preservatives.

PABA is listed in the annex: Permitted UV-filters.

An essential oil (oil of cactus) and the herb (lily of the valley) are not listed on the INCI list. In relation to “do it yourself” cosmetics this is of no practical use as they are not intentionally put on the market (if used in marketed open to the public products one have to apply for an INCI name for the raw materials used). If the essential oils are used as perfume they only have to be declared as “perfume” in the list of ingredients

Sodium borate may damage the human ability for reproduction and is by suppliers labelled T (toxic). In Denmark it can not be sold to private persons without police permission. Private persons can not normally obtain such permission. It is first within the last year or two that sodium borate is labelled toxic, therefor it is possible that some health food shop, drysalters and a number of households have unlabelled sodium borate in their possession.

“Kønrøg” is listed as carbon black in the National Working Environment Authoritys order of carcinogenic substances /13/.

Carbon black, and other dusty materials with a content of respirable carbon black \geq 0.1% is covered by Danish legislation of carcinogenic substances /13/.

The Danish legislation of carcinogenic substances /13/ covers both commercial and private use of carbon black, while a material safety data sheet only is a demand for commercial use of carbon black. Recipe 26 does not mention that carbon black is listed as a carcinogenic substance. It is allowed to use carbon black as a colouring agent in cosmetic products /8/.

Parabens and sodium benzoate can cause sensitisation /14/.

Some essential oils may also cause sensitisation /15/.

During the manufacturing process one is exposed to these substances in concentrated form. The recipes advise one to use these substances without giving any warnings about the health hazards.

There is no information on the package of the essential oil and the soap flakes for recipe no. 28. This means that it is impossible to identify any risks regarding contact with the chemicals.

The manufacturing processes could also include physical hazards such as scalding, burning and cauterization. None of the recipes recommend use of personal protection equipment such as gloves or face protection.

This in spite of the label (C;R35) on the raw material sodium hydroxide orders use of personal protection equipment. Only one of two recipes (no. 30) gives instruction about first aid in case of skin contact but there is no instruction about

first aid in case of eye contact. Sodium hydroxide can cause blindness in case of contact with the eyes.

The quality of the recipes varies a lot. They vary from being good and clear to insufficient. An insufficient recipe has no description of the manufacturing process or the raw materials. This has an influence on safety during the manufacturing process if one easier can overview the manufacturing process. In a good recipe it is possible to minimize the physical dangers because the physical dangers can be identified and prevented.

Very few recipes give information on expiry date or storage even though there is such a demand for cosmetic products to the public marked in directive 76/768/EEC /8/. Cosmetic products have to be labelled with an expiry date if valid less than 30 month.

Statements like “not poisonous, “natural”, “without non-naturel synthetic scent substances” and “99-100% biodegradable” are often used. Praising like this could be illegal /9a & 9b/. Directives /9a&9b/ regulation cover the raw materials used to “do it yourself” cosmetics. If sold as a cosmetic kit they are covered with directive 6/768/EEC /8/. In this directive the rules according to which statement can be used are different. There is a possible violation of the Ministry of Health legislation when a term such as “acts against certain forms of acne and eczema” is used.

According to the marked survey half of the users are children and teenagers in schools and afterschool centres. Children and teenagers are particular sensitive and easier exposed during the manufacturing process as adults. Among other things they do not have the same experience. The possible exposure as well as scalding and burning may therefor be expected to be considerable greater for children and teenager even if they are supervised by an adult.

This has uncovered a need for information to the users of ”do it yourself” cosmetics, especially schools and afterschool centres, about the risks and dangers involved in the process of making ”do it yourself” cosmetics.

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11. Telephone interviews with Mette Fischer, Dealer, November 2001.
12. Price list from a dealer: Råvarer til naturkosmetik & sundere slik, 1. juni 2001.

13. Arbejdstilsynets bekendtgørelse nr. 140 af 17. feb. 1997 om foranstaltninger til forebyggelse af kræftisikoen ved arbejde med stoffer og materialer m.v., ændret ved bekendtgørelse nr. 999 af 16. dec. 1997, nr. 1001 af 15. dec. 1999 og nr. 521 af 15. juni 2000 (The Danish Cancer legislation).
14. Thomsen, Kirsten Graa
AMI-rapport nr. 33/1990
Allergens in the working environment.S
15. The Scientific Committee on cosmetic products and non-food products intended for consumers, SCCNFP/001/98.
Fragrance allergy in consumers, December 1999.

8 Table of raw materials contained in recipes 1 to 30

The table is giving for the raw materials there are used in the recipes. The raw materials are listed in the succession they appear in recipe 1 to 30, and are registered with trade name, INCI name, date of purchase, bar code, batch number and a description of the raw material. In cases where recipes are evaluated by analogy no bar code or batch number are mentioned for the raw materials.

The supplier of the raw materials stated that all the bought raw materials were approved for cosmetic use, except for Carrageen, V-E fedt and M-F fedt those were food grades.

For some of the raw materials there are mentioned more than one CAS- number. This is due to the fact that a substance can be found as different hydrates, everyone assigned with their own CAS-number, and because some raw materials are mentioned in the INCI list with more than one CAS-number.

Only a few of the raw materials have to be marked with a danger label. Sodiumhydroxide and Ethanol are mentioned on the list of dangerous substances (Annex I to Directive 67/548/EEC), and have to be labelled respectively C;R35 and F;R11. The concentration of the used Paraben is unknown and the raw material has no danger label. Manufactures, distributors and importers of dangerous substances which have not yet been introduced into Annex I shall be obliged to carry out an investigation to make themselves aware of the relevant and accessible data which exist concerning the properties of such substances. On the basis of this information, they shall package and provisionally label these substances (Article 6, Directive 92/32/EEC). An investigation of parabens hazardous properties to health ought to result in a classification of the substance. ALTox has by such an investigation classified parabens to R43, this will cause a concentration of 1% parabens to be labelled with Xi;R43. Borax is by ALTox classified as Rep2;R60 Rep3;R63, this results in a labelling of borax with T;R60-63.

<i>Tradename</i>	<i>Description of the raw material</i>	<i>INCI name</i>	<i>CAS number</i>	<i>Date of purchase</i>	<i>Bar code</i>	<i>Batch number</i>
Rosenvand	Clear liquid	Aqua Rosa centifolia (Parfume)	84604-12-6	17/10-2001	5 709286 033065	051033
Tidseolie	Clear liquid	Carthamus tinctorius	8001-23-8	17/10-2001	5 709286 010059	0812850602
Lanettevoks	White powder	Cetearyl alcohol	67762-27-0 / 8005-44-5	17/10-2001	5 709286 018024	030099-008600
V-E fedt	White powder	Glyceryl stearate	31566-31-1	17/10-2001	5 709286 025022	0600205015
M-F fedt	White powder	Sodium stearoyl lactylate	25383-99-7	17/10-2001	5 709286 026036	061L2006140
Glycerin	Clear liquid	Glycerin	56-81-5	17/10-2001	5 709286 031030 eller 031054	110524454 ell. 041525938
Paraben	Clear liquid	Methylparaben Propylparaben Phenoxyethanol	99-76-3 94-13-3 122-99-6	17/10-2001	5 709286 068012	021068
Kaktusolie	Clear liquid	-	-	17/10-2001	-	-
Sheasmør	White greasy homogeneous mass	Butyrospermum parkii	91080-23-8	17/10-2001	5 709286 020003	081002-06746-044

Kakaosmør	White greasy powder	Theobroma cacao	84649-99-0	17/10-2001	5 709286 016037	091AU5101CA
Bivoks	Brownish plates	Cera alba	8012-89-3 8006-40-4	17/10-2001	5 709286 015009	091015
Rosenduft	Clear oil	Rosa Centifolia	84604-12-6	17/10-2001	-	-
Lanolin	Greasy mass	Lanolin	8006-54-0	17/10-2001	5 709286 019052	1107860
Mandelolie	Clear liquid	Prunus dulcis	8007-69-0	17/10-2001	5 709286 006052	0212737201
Panthenol	Clear liquid	Panthenol + Aqua	81-13-0	17/10-2001	5 709286 072033	061TL00101003
Sulfat	Clear thick liquid	Mipa-laureth sulfate Cocamidopropyl betaine	83016-76-6 / 9062-04-8 61789-40-0	17/10-2001	5 7092865 038060	091038415001 ell. 041035456001
Perlemorssulfat	White thick opalish liquid	Cocamidopropyl betaine Mipa-laureth sulfate Glyceryl distearate Coco-glucoside Glycerin	61789-40-0 83016-76-6 / 9062-04-8 1323-83-7 - 56-81-5	17/10-2001	5 709286 039067	040022276-001

Æbleblomstolie	Clear oil	Pyrus malus (parfume)	89957-48-2	17/10-2001	5 709286 130016	031002121
Carraghen	White powder	Carrageenan	9000-07-1	2/11-2001	5 709286 054077	08104710-0
Renset kridt	White powder	Calcium carbonate	471-34-1	2/11-2001	5 709286 047055	058A3577
Pebermynteolie	Clear liquid	Mentha arvensis	90063-97-1	2/11-2001	5 709286 257027	0816778
Pimpstenspulver	Grey powder	Pumice	1332-09-8	-	-	-
Nellikeolie	Clear liquid	Eugenia caryophyllus	84961-50-2	-	-	-
Abrikosolie	Clear liquid	Prunus armeniaca	68650-44-2	-	-	-
Kokosolie	Clear liquid	Hydrogenated coconut oil	84836-98-6	-	-	-
Natriumbenzoat	White powder	Sodium benzoate	532-32-1	-	-	-
Sesamolie	Clear liquid	Sesamum indicum	8008-74-0	-	-	-
Lecitingranulat	White granulate	Lecithin	8002-43-5	-	-	-

Lavendelekstrakt		Lavendula angustifolia / hybrida	90063-37-9 / 91722-69-9	-	-	-
Kamilleekstrakt	Faint yellow liquid	Anthemis nobilis	84649-86-5	-	-	-
Aloe-gele	Clear gel	Aloe barbadensis	85507-69-3	-	-	-
Stearin	White greasy powder	Stearic acid Palmitic acid	57-11-4 57-10-3	-	-	-
Finsprit	Clear liquid	Alcohol	64-17-5	-	-	-
PABA	White powder	PABA	150-13-0	-	-	-
Olivenolie	Clear oil	Olea europaea	8001-25-0	-	-	-
Hvedekimolie	Clear oil	Triticum vulgare	9005-25-8	-	-	-

NFF-kompleks	Clear liquid	Aqua Sodium-PCA Sodium lactate Urea Propylene glycol Hydrolized soy protein Asparagus officinalis Sodium phosphate Oleth-10	7732-18-5 28874-51-3 72-17-3 57-13-6 57-55-6 68607-88-5 84649-90-1 7558-80-7 9004-98-2	-	-	-
Pektinpulver	White powder	Pectin	9000-69-5	-	-	-
Rosmarinolie	Clear oil	Rosmarinus officinalis	84604-14-8	-	-	-
Liljekonvaller	Flowers and leaves	-	-	-	-	-
Lavendelolie	Clear oil	Lavandula angustifolia / hybrida	90063-37-9 / 91722-69-9	-	-	-
Geraniumolie	Clear oil	Geranium macalatum / robertianum	84650-10-2 / 84650-11-3	-	-	-
Bergamotolie	Clear oil	Citrus bergamia	89957-91-5	-	-	-

Citronolie	Clear oil	Citrus limonum	84929-31-7	-	-	-
E-vitamin	Light yellow oil	Tocopherol	59-02-9	-	-	-
Karotin	Dark violet powder	Beta-carotene	7235-40-7	-	-	-
Azulen	Blue powder	Azulene	275-51-4	-	-	-
Kamferolie	Clear liquid	Cinnamomum camphora	91745-89-0	-	-	-
Tea-tree olie	Clear liquid	Melaleuca alternifolia	85085-48-9	-	-	-
Vineddike	Clear liquid	Acetic acid	64-19-7	-	-	-
Salt	White powder	Sodium chloride	7647-14-5	20/10-2001	-	-
Saponin	Light yellow powder	Saponins	8047-15-2	-	-	-
Morgenfrue	Flowers and leaves	Calendula officinalis	84776-23-8	-	-	-
Talkum	White powder	Talc	14807-96-6	-	-	-

Zinkoxid	White powder	CI 77947	1314-13-2	-	-	-
Titanoxid	White powder	CI 77891	13463-67-7	-	-	-
Ultramarinblåt	Blue powder	Ultramarines	1345-00-2	-	-	-
Sort (oxydsort)	Black powder	CI 77499	1317-61-9	-	-	-
Farnesol	Clear liquid	Farnesol	4602-84-0	-	-	-
Guarmel	White powder	Cyanopsis tetragonoloba	9006-30-0	-	-	-
Appelsinolie	Yellow/orange oil	Citrus dulcis	8028-48-6	-	-	-
Boraks	White powder	Sodium borate	1330-43-4 1303-96-4	-	-	-
Tyrkiskrødtolie	Red oil	Sulfated castor oil	8002-33-3	-	-	-
Fyrrenåleolie	Clear greenish oil	Pinus sylvestris	84012-35-1	-	-	-
Akaciegummi	White powder	Acacia	9000-01-5	-	-	-

Kønrøg	Black powder	Carbon black CI 77266	1333-86-4	-	-	-
Natriumhydroxid	White powder	Sodium hydroxide	1310-73-2	22/11-2001	5 701081 365419	-
Palmeolie	Clear liquid	Elacis guineensis	8002-75-3 / 8023-79-8	-	-	-
Krystalsoda	White krystals	Sodium carbonate	497-19-8	-	-	-
Oksetælle	Light brown fat	Adeps bovis	61789-97-7	22/11-2001	-	-
Sæbemasse	White greasy	Contents unknown	-	16/10-2001	7 320182 806010	-
Blå farve	Blue liquid	CI 42090	2650-18-2 3844-45-9 68921-42-6	16/10-2001	7 320182 806373	-
Gentleman duft- olie	Clear oil	Contents unknown	-	16/10-2001	7 320182 806287	-
Duftolier	Oil	Depend on the plant species	-	-	-	-

