

Survey of chemical substances in consumer products

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Mapping of chemical substances in animal care products

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1 Preface

This report treats the results of the project:

”Mapping of chemical substances in animal care products”

which is part of the overall EPA efforts in connection with mapping of chemical substances in consumer products.

The project has been carried out by the Danish Toxicology Centre and the following employees:

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The project has been followed by the EPA and employee

Anette Ejersted

The mapping was carried out during the period of May 2003 through December 2003.

Producers/retailers have had an opportunity of commenting on the report and the results before publication. The Danish EPA did not receive any comments.

2 Summary and conclusions

This project defines animal care products as products for the care of dogs, cats and horses. At the same time, the products must be for external use. Flea products, diet supplements and medicinal products are not included in this project.

The mapping of animal care products in Denmark has been carried out through store visits as well as Internet and reference searches. 19 suppliers were visited or contacted by telephone.

The mapping of animal care products has clearly shown that the market is very confusing. It has been very hard to get an overview of producers/suppliers/dealers. It is expected that approximately 75% of the product names sold in Denmark have been found and mapped. This corresponds to 455 animal care products for horses, cats and dogs. Of these, 315 products are for cats and dogs and 140 products are for horses.

Information on the content of chemical substances in animal care products has been obtained by different means; partly by written contact to producers/suppliers/dealers and partly by information obtained from the packaging and the Internet. 40 producers/suppliers/dealers have been contacted by e-mail or letter. It has been complicated to gather the composition information for the animal care products as the trade route of these products is not transparent. In addition, the interest in this product has been very mixed for the producers, suppliers and dealers.

The composition information received has been of a very varied quality. Some producers have forwarded the complete composition information with exact percentage content and CAS nos. for the ingredients. Others have forwarded INCI-declarations or substance group designations. It has not been possible to identify all of these group designations.

This means that our knowledge about the ingredients in 157 of the 455 products identified on the Danish market is not uniform. Those 157 products are the products for which we have either received composition information of varied quality or for which the labelling declaration has provided some information about the composition. We do not have any composition information for the remaining products.

Of the 218 products for which we have seen the packaging in stores or online, 31 products have a declaration corresponding to a complete INCI-declaration which is a demand for cosmetic products.

The project has been carried out within a fairly short time period of 5 months during the summer. This has not been the best time to gather composition information and timing may have had an influence on the limited composition information from producers and suppliers. For the same reason, a complete mapping has not been possible. Approximately 35% of the products' composition has been uncovered – a not entirely satisfactory success rate.

Animal care products are chemical products regulated according to the chemical legislation. In this project, the health hazardous properties of the products and

ingredients have been evaluated in relation to the regulations in both the chemical and cosmetic legislations.

Approximately 50 substances have been found that are classified according to the criteria that form the basis for a.o. the list of hazardous substances. We emphasize those substances that have been identified as having long term effects: chloroxyleneol, methylchloroisoithiozolinone/methylisoithiozolinone, formaldehyde, triethanolamin, boric acid, benzoyl peroxide, coal tar, vegetable terpentine and 1-phenylazo-2-naphthol.

Only a few substances have been identified that are not allowed in cosmetic products. These are "laurus nobilis" (laurel) and benzoyl peroxide that are both on the prohibition list. Only one product has been identified that contains bezoyl peroxide. In addition, there are 6 substances that have been stated as preservatives but that are not on the cosmetic legislation list of approved preservatives as well as 2 dyes that are not on the positive list of dyes in cosmetics.

None of the substances, for which there is a knowledge about the content concentration, exceed the allowed limit in cosmetics. A careful conclusion can therefore be made that the current cosmetic legislation is mainly observed in the animal care products for which the composition information is known.

Based on the mapping in phase 1 of the project, 6 products were chosen for further analysis in cooperation with the EPA. They were analysed for preservatives, organic substances, scents and metals.

From the analysis results, questionable substances such as chlorine paraffins, phthalates, 1,4-dioxan and scents that may cause allergy have been found. 1,4-dioxan is not allowed in cosmetics and was found in 5 of the 12 products analysed. However, the concentrations measured of all the substances identified are generally very low.

The demands for these substance groups will be tightened considerably with the new cosmetic regulations that are expected to be implemented in 2004. This may mean that more critical ingredients will be substituted in the long run. A large number of the scents measured in the analysis would have to be stated on the INCI-declaration if animal care products were regulated according to the future cosmetic legislation.

Finally, it must be concluded that sufficient composition information has not been received to form a complete picture of the composition of animal care products. However, the project does give a reasonable picture of the content of chemical substances in animal care products.

The list of ingredients confirms our assumption that animal care products are constructed in the same way as cosmetic products for humans.

3 Sammenfatning og konklusioner

Dyrepøjeprodukter er i dette projekt defineret som produkter til pleje af hunde, katte og heste, og produkterne skal samtidig være til udvortes brug. Utøjsmidler, kosttilskud og medicinske produkter er ikke medtaget i dette projekt.

Kortlægningen af dyrepøjeprodukter i Danmark er foretaget ved besøg i butikker, søgninger på Internettet og i opslagsværker. 19 forhandlere er besøgt eller kontakttet telefonisk.

Kortlægningen af dyrepøjeprodukter har tydeligt vist, at man har at gøre med et meget uoverskueligt marked. At få overblik over producenter/leverandører/forhandlere har ikke været nogen let opgave. Det vurderes, at der er fundet frem til og kortlagt ca. 75% af de produkter, der sælges i Danmark. Dette svarer til 455 dyrepøjeprodukter til heste, katte og hunde. Heraf er 315 produkter til hunde og katte og 140 produkter til heste.

Oplysninger om indholdet af kemiske stoffer i dyrepøjeprodukterne er tilvejebragt på forskellig måde; dels ved skriftlig kontakt til producenter/leverandører/forhandlere og dels ved oplysninger hentet fra emballagen og Internettet. 40 producenter/leverandører/forhandlere er kontakttet pr. e-mail eller brev.

Indhentning af sammensætningsoplysninger på dyrepøjeprodukter har været kompliceret, da disse produkters handelsvej ikke er letgennemskuelig. Desuden har interessen for dette projekt været meget blandet hos producenter, leverandører og forhandlere.

De sammensætningsoplysninger, der er modtaget, har været af en meget varierende kvalitet. Hvor vi fra nogle producenter har modtaget fuldstændige sammensætningsoplysninger med nøjagtigt procentindhold og CAS nr. for indholdsstofferne, har vi fra andre modtaget INCI-deklarationer eller stofgruppebetegnelser. Nogle af disse stofgruppebetegnelser har det ikke været muligt at identificere entydigt.

Det betyder, at det ikke er samme viden, vi har til indholdsstofferne i 157 af de 455 produkter, der er identificeret på det danske marked. De 157 produkter er de produkter, hvor der enten er modtaget sammensætningsoplysninger af en eller anden kvalitet, eller hvor etiketdeklarationen har givet nogle oplysninger om sammensætningen. De øvrige produkter har vi ingen sammensætningsoplysninger på.

Af de 218 produkter, hvor vi har set emballagen i butikker eller på nettet, har 31 produkter en indholdsdeklaration svarende til en fuldstændig INCI-deklaration, som der er krav om for kosmetiske produkter.

Projektet er gennemført i løbet af en forholdsvis kort tidsperiode, 5 måneder over sommeren. Det har ikke været det bedste tidspunkt for indhentning af sammensætningsoplysninger, og dette kan have haft indflydelse på det begrænsede antal sammensætningsoplysninger fra producenter og leverandører. En fuldstændig kortlægning har derfor ikke været mulig. Der er afdækket ca. 35% af produkternes sammensætning. En ikke helt tilfredsstillende succesrate.

Dyrepøje produkter er kemiske produkter reguleret i henhold til kemikalielovgivningen. I dette projekt er produkterne og indholdsstofferne vurderet i forhold til reglerne i både kemikalielovgivningen og i kosmetiklovgivningen.

Der er fundet ca. 50 stoffer, der er klassificeret i henhold til de kriterier, der ligger til grund for blandt andet listen over farlige stoffer. De stoffer, der her skal fremhæves, er de stoffer, der er identificeret med langtidseffekter. Det er stofferne chlorxylenol, methylchloroisothiazolinon/methylisothiazolinon (Kathon), formaldehyd, triethanolamin, borsyre, benzoylperoxid, kultjære, vegetabilsk terpentint og 1-phenylazo-2-naphthol.

Der er kun identificeret få stoffer, der ikke må være til stede i kosmetiske produkter. Det er "laurus nobilis" (laurbær) og benzoylperoxid, som er på forbudslisten. Kun et produkt indeholdende benzoylperoxid er identificeret. To produkter, som indeholder laurbærolie, er identificeret. Derudover er der 6 stoffer, som er angivet som konserveringsmidler, men som ikke er på kosmetiklovgivningens liste over tilladte konserveringsmidler, samt 2 farvestoffer der ikke er på positivlisten over farvestoffer i kosmetik.

Ingen af de stoffer, hvor der er kendskab til indholdskoncentrationen, overskrider den tilladte grænse i kosmetik. Det kan dermed forsigtigt konkluderes, at den gældende kosmetiklovgivning mht indholdsstoffer i det store hele overholdes for de dyrepøje produkter, hvor sammensætningen er kendt.

På baggrund af kortlægningen i 1. fase af projektet blev der i samarbejde med Miljøstyrelsen udvalgt 6 produkter til nærmere analyse. De blev analyseret for konserveringsmidler, organiske stoffer, duftstoffer og metaller.

Ud fra analyseresultaterne er fundet sundhedsbetænkelige stoffer såsom chlorparaffiner, phthalater, 1-4 dioxan og allergifremkaldende duftstoffer. 1,4-dioxan er ikke tilladt i kosmetik og fundet i 5 af de 12 analyserede produkter.

De målte koncentrationer af alle de identificerede stoffer er dog generelt meget lave.

Med de nye kosmetikregler, der forventes implementeret i 2004, omhandlende allergifremkaldende parfumestoffer og stoffer, der er mistænkt for at være kræftfremkaldende, skærpes kravene betydeligt for disse stofgrupper. Dette kan betyde, at flere kritiske indholdsstoffer vil blive substitueret på sigt. En lang række af de duftstoffer, der er målt i analyserne, vil skulle oplyses på INCI-deklarationen, hvis dyrepøje produkter var reguleret i henhold til den kommende kosmetiklovgivning.

Det må til slut konkluderes, at der ikke er modtaget tilstrækkelige sammensætningsoplysninger til at kunne give et fuldstændigt billede af sammensætningen af dyrepøje produkter, men projektet giver helt klart et rimeligt billede af indholdet af kemiske stoffer i dyrepøje produkter.

Listen over indholdsstoffer bekræfter vores formodning om, at dyrepøje produkter er opbygget som kosmetiske produkter til mennesker.

4 Introduction and purpose

Many different products and product types are used for animal care in Denmark. The products are used i.a. for animal fur and skin care. Fur care and fur problems are important parameters in the well-being of the animals – popularly speaking, the fur is the mirror of health. The products are used mainly at home or in so-called animal salons.

Animal care products are sold retail, at animal salons and clinics, online, by mail order and at various animal shows and exhibitions.

The project focuses on consumer, not animal, exposure. This exposure mainly occurs through skin contact, e.g. when the animal is rubbed, washed and rinsed. There may also be a risk of inhalation of vapours and aerosols when using foaming products. Children will risk exposure as they often carry out or participate in these pet care activities.

Animal care products contain several different substance types of which biocides (preservatives and disinfection agents) and perfumes are probably the most serious from a human toxicological standpoint.

The target group of the project is consumers of animal care products as well as the authorities that regulate the legislation in the field.

The project is divided into 2 phases, a mapping phase and an analysis phase.

The first phase is mapping of animal care products and their ingredients.

The second phase is a quantitative and qualitative analysis of selected products. The EPA has wished to evaluate whether animal care products, that are regulated according to the chemical legislation, observe the legislation for cosmetic products as the exposure to the products is similar to the exposure that occur with cosmetic products.

The main purpose of phase 1 of the project has been to obtain an overview of which animal care products are sold in Denmark as well as which chemical substances are used in the products. Focus has been on dog, cat and horse care products. The purpose has also been to obtain an estimate of the consumption of animal care products sold on the Danish market.

Phase 1 has provided the following information:

- An overview of which animal care products are sold in Denmark.
- Knowledge of a very complicated distribution network.
- Knowledge of which ingredients can be found in animal care products.

The main purpose of phase 2 has been to illustrate which ingredients may pose a health risk. This has been accomplished partly through qualitative and partly through quantitative analyses. In particular, focus has been on the content of sensitizing substances as well as on whether animal care products observe the limitations/demands and labelling regulations for cosmetic products.

Phase 2 has provided the following information:

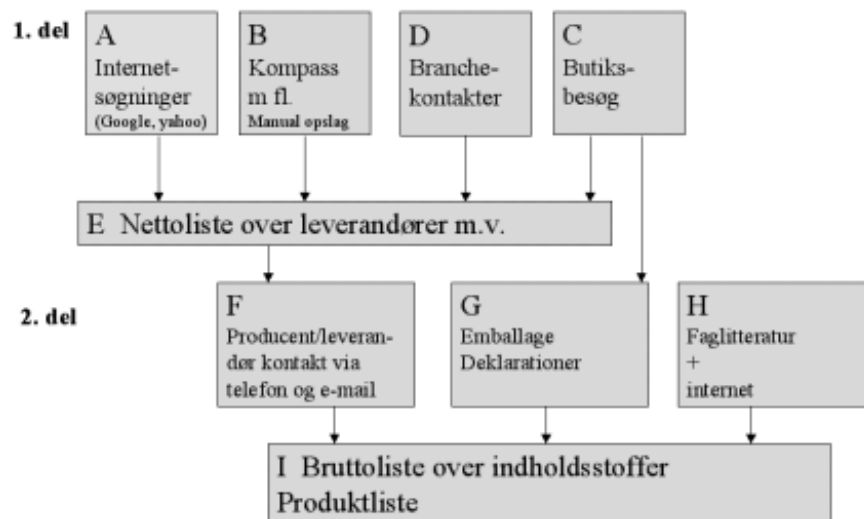
- Further product knowledge through the analyses.
- Knowledge of health hazardous ingredients with regard to the chemical legislation.
- Knowledge of health hazardous ingredients with regard to the cosmetics legislation.
- Knowledge of how animal care products may differ from cosmetic products.

5 The mapping

5.1 Work method

The mapping of animal care products during phase 1 of the project can be divided into 2 parts. Part 1 (described under A, B, C, D and E) is a mapping of relevant producers/suppliers/distributors on the Danish market as well as the products being sold. Part 2 (described under F, G, H and I) is a mapping of the ingredients in the animal care products found. However, the two parts are connected. The work method for these mappings has been illustrated in the flow diagram below.

Flowdiagram over kortlægning af leverandører m.v., samt indholdsstoffer



A. The Internet

The Internet search engines Yahoo and Google have been used to map relevant producers/suppliers/distributors on the Danish market. Free text searches were carried out using search words related to the subjects of "animal", "animal articles", "animal care", "animal care products", "care products for..." combined with words such as "horse", "dog" and "cat". Only Danish sites were searched.

B. Kompass etc.

Searches were carried out at www.kompass.dk for producers/suppliers/distributors of animal care products. The search words used were "animal articles", "animal care products", "fur care", "animal care", "dog shampoo" and "pet articles". Only the word "animal articles" gave any hits, a total of 13. The remaining search words did not result in any hits.

Searches were carried out at www.kennel-klub.dk. These located stand renters at the Danish Kennel Club's international shows. Several of these stand renters are distributors/importers of dog care products.

Searches were carried out at www.fagbogdanmark.dk with the search word "animal articles" which resulted in 30 hits.

Searches were carried out at www.dog-inn.com which contains links to everything related to dog accessories.

Searches were carried out at www.teledanmark.dk with search words such as animal articles and riding equipment.

References were found manually in telephone directories and local directories under animal articles.

C. Store visits

Relevant stores were visited (pet stores, larger stores carrying pet supplies, stores carrying riding equipment). The product range was noted as were producers/suppliers stated on the labels. In addition, the product names and any declarations were noted along with information on which store the products were found in.

D. Trade contacts

Individual confidential trade contacts were contacted by telephone. Specific information on producers/suppliers/distributors and any connection between companies has been received.

E. List of suppliers

A net list of all relevant producers/suppliers/distributors of animal care products in Denmark has been prepared.

F. Supplier contact

All relevant suppliers were contacted by telephone and they were asked if they would be interested in participating in the project. In addition, contact persons were identified along with their e-mail addresses.

A letter of information was prepared. The letter describes the purpose of the project, which product types we are interested in, the composition information requested, safety data sheet and annual sales numbers. If no information had been received after 1-2 weeks, the companies were reminded by telephone.

Confidentiality statements were forwarded at the request of the companies. The companies were reminded a total of 2-5 times depending on the nature of the contact. If the companies had expressed an interest in participating in the project, several reminders were forwarded whereas no reminders were sent if the companies had been reluctant to participate.

G. Packaging declarations

During store visits, +/- was used to indicate packaging declarations. If the packaging/labelling contained a declaration, this was noted.

H. Specialist literature and the Internet

Individual technological works of reference such as Kirk Othmer¹ and Ullmans² have been checked for information on the structure and technology of animal care products.

Information on product composition has been noted if this information could be found on the company websites.

I. Substance list

A gross list of all stated ingredients has been prepared.

6 Result of the mapping

6.1 Product types

An overview of product types has been prepared along with a short description of the area of use for the product type, see table 5.1. The product types have been described jointly for cats and dogs as these products are often used for both species while product types for horses have been described separately.

It cannot be excluded that very specific product types may be found in addition to those mentioned below. Only products for external use have been included in the mapping.

Table 6.1. Description of product types and their uses

Product type (Dogs and cats)		Product description and use
Fur care:	Shampoo	Washing of dog or cat fur. Many variations of animal shampoo exist on the Danish market, containing partly dyes to "encourage" the nuances in and play of the fur or bleach for light coats and partly proteins, oils, tea tree oil, citronella, oatmeal, aloe vera, jojoba etc. There are products for particularly sensitive skin, for animals with allergies and products to get rid of dandruff. These are mainly products that are rinsed out after washing, but <i>leave-on</i> products are available as is dry shampoo in the form of powder.
	Balsam	Used for both dogs and cats after the fur has been washed to make it soft and easy to comb or brush.
	Spray for tangled fur	Used for both dogs and cats with a tendency to have tangled fur. Is sprayed on the fur before combing/ brushing.
	Fur treatment	Used for both dogs and cats to add nourishment to the fur and to make it soft and easy to comb/brush.
	Skin and fur oil	During trimming of the animal, skin and fur oil is added to provide the fur and skin with fats.
	Fur spray	Fur spray is available which is used to style the fur for shows, partly to give hold to the "hair style" and partly to add gloss (a.o. spray with added vitamin F) as well as spray with added sun block to protect against bleaching by the sun.
	Powder	During trimming of the animal, powder is added to ease the combing as well as to remove fats and bad odours.
	Paw wax	Used partly as protection of sensitive paws in salt and slush as well as to make the paws non-skid during shows.
Ear care:	Ear cleaning	Used for both dogs and cats to prevent itching as well as to remove bad odours due to accumulated earwax and dirt.
	Eye bath	Used for both dogs and cats. For cleaning of eye lids and around the eyes as well as for cleaning before and during medical treatment of eye infections.

	Tear remover	Used to remove streaks of tears (particularly in dogs with light fur) that run from the dog's eyes. Used to clean the skin folds of "wrinkle dogs". Also used for cats.
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Product type (Dogs and cats)		Product description and use
Intimate care:	Preputial cleaning	Used for both dogs and cats. Cleaning of the preputial fold as well as cleaning of the preputial mucous membrane in case of non-pathological flux and for cleaning before and during anti-microbial therapy for inflammatory conditions.
	Bleaching of urine blotches	Dry-cleaning product used for both dog and cats to remove urine blotches.
Oral care:	Toothpaste	Used for both dogs and cats for cleaning, for keeping clean and for care of teeth and gums.
Product type (Horses)		Product description and use
Fur care:	Shampoo	For washing of horse fur. Several variations of horse shampoo exist on the Danish market. They contain partly plant extracts to bring out the natural colour of the horse, partly silk proteins, aloe vera, jojoba, lanolin etc. In addition, there are shampoos on the market containing substances that promote blood circulation as well as products that neither require the horse to be damp before washing nor that it be rinsed after use of the product.
	Balsam	Used after washing to make the fur soft and easy to brush/groom.
	Fur spray	Spray used to give shine to the fur, to keep the mane and tail tangle-free and to repel dust and dirt.
	Fur shine	Spray used to give the horse's fur a shining look for shows.
	Summer gel/spray	Spray/gel used to preserve the horse's well-being on days with dry and quiet weather, during riding and at dusk.
Fur care/ makeup:	Highlighter	Used around eyes, ears and muzzle to highlight these before showing.
	Twinkle gel	Twinkle gel for tail, body and mane.
Hoof care:	Hoof clay	Used to keep the hoofs moist and elastic and to prevent cracks and clefts.
	Hoof oil/grease	Used to protect the hoofs during daily care and to give the hoofs a nice surface for e.g. horse shows.
	Hoof ointment/creme	Particularly used when the hoof glaze layer is damaged, e.g. after training on sandy courses. Can also be used on the coronary border if the horse has problems with dry or peeling coronary border.
	Hoof lacquer	Used to give the hoofs a nice surface for e.g. horse shows.

Products marketed as insecticides against e.g. fleas are not covered by the mapping. Often, dietary supplements for the pets are mentioned under care products, e.g. fish oil to prevent fur problems such as shedding. This type of product is not included in the mapping. Fur dye/hair colouring products are included as the dye is often included in the shampoo. Massage oils and anti-lick products are not included as it has been estimated that this type of product is not for care but for soothing of muscle pain and is mainly used on animals with injuries such as muscle strain or the like. However, it cannot be excluded that several of the products mentioned are also used as massage oils.

6.2 Producers/suppliers/distributors

Table 6.2 contains producers/suppliers/distributors for the Danish market who have been identified over the Internet, through product labels (store visits, see table 6.3) and through supplier contacts. The products sold by these companies are either foreign products, own production or products with a private label from other distributors.

These producers/suppliers/distributors have all been contacted by e-mail or letter and information has been requested on product composition, safety data sheets, if available, and sales numbers. The interest and willingness to contribute to this mapping has been somewhat scattered as can be seen from table 6.2. At the same time, it is something of a jungle to obtain an overview of who is the producer, the importer and the distributor. Several of the companies have been bought by each other, some re-label the products and some still have products for sale even though the production has been discontinued.

Table 6.2. Producers/suppliers/distributors on the Danish market

Producer/supplier/distributor	Information	Comments, website
Bayer Vet Danmark	+	www.bayer-animal-health.com Retail sale, animal clinics
BifoPet Products AS	-	Producer for Chrisco AS, see this.
Bluehors Aps	+	www.bluehors.dk Retail sale
Brogården	+	www.brogaarden-foder.dk Retail sale
Cat and dogstore	+	www.dogstore.dk Online sale, retail sale
Chrisco AS	+	www.chrisco.dk Retail sale
Cultus Danmark	+	www.cultus.dk Retail sale
Dan Drift A/S	-	www.dandrif.com
Dan rider Aps	+	www.danrider.dk Online sale, retail sale
Diafarm AS	+	www.diafarm.dk Retail sale
EL KAMA Jamodan	+	www.elkama-jamodan.dk
Equihelp	-	www.equihelp.dhobasis.dk Online sale, retail sale
Perfect choice- FLP	-	www.perfectchoice.dk Online sale
Hjørnely Trading A/S	-	www.webshop.hjoernely.dk Online sale, sale from own store
HundensNetbutik	-	www.hundens.net Online sale
Jørgen Kruise AS	+	www.kruise.dk Retail sale
KaTaYa's dyrehandel	+	www.kataya.com Online sale
Kemex A/S	-	www.kemex.dk
KW hunde og katteartikler A/S	-	www.kw.dk Retail sale, shows
Leo Animal Health AS	+	www.leo-pharma.com Retail sale, animal clinics
Mustang International Aps	+	www.mustang.dk Online sale, sale from own store
OK-gruppen A/S	-	www.okgruppen.dk Retail sale
Pet Care laboratory AB	-	www.pcldogcat.com

(Pet care Aps)		Retail sale
Pethouse Denmark	-	www.pethouse.dk Online sale
Pitstop for pets	+	www.pitstoppets.dk Online sale, shows
Ridehuset	-	www.ridehuset.dk Online sale, huckster's markets
Rider sport	-	www.ridersport.dk Online sale, retail sale
Skyescot Trading	+	www.skyescot.dk Online sale, shows

Producer/supplier/distributor	Information	Comments, website
Stardog	-	www.stardog.dk Online sale
Tholo hundekartikler	-	www.tholo.dk Sale from own store, shows
Thordal-Christensen	+	www.thordal.dk Online sale
Tophorse AS	-	www.tophorse.dk Retail sale
Topsport A/S	-	www.topsport.dk Retail sale
Trav Discount	-	www.travdiscount.dk Sale at trotting tracks, sale form own store
Unipet A/S	-	Retail sale
Unique Pet Products	+	www.nutro.dk Retail sale
VitakraftDanmark AS	+	www.vitakraft.com Retail sale
Vo-Toys,Inc	-	www.vo-toys.com
ZooCity Online	-	www.zoocity.dk Online sale, retail sale
Chemvet Dk A/S	+	Sells only to animal clinics

* Information refers to composition information

+ Information of varying quality received

- No information received.

Retail sale: The products can be bought by the consumer in e.g. animal product stores

Online sale: The products are sold through an online store

Animal care products can be sold in several ways. In the big pet article chains such as Maxi Zoo, you can find several of the major distributors with a large and wide assortment such as KW, Vitakraft, Diafarm etc. At pet stores, you can also find these product series, but with a smaller selection. The distributors who offer online sale only will often be the ones that are also found at shows, exhibitions etc.

Table 6.3 lists the distributors of animal care products who have been contacted (by telephone) or who have been visited. These companies do not have their own private labels which they sell and they are all the second or third link in the sales chain.

Table 6.3. Companies contacted by telephone or visited

Telephone contact or visit	Comments
Himmerlev Dyreklinik	
Mosbæk Foder & Rideudstyr	www.foderogrideudstyr.dk
Lystrup Dyrecenter	www.dyrecenter.dk
Brovst Dyreklinik	
Poppi Dyrecenter	Pet store
Hørsholm dyrehandel	Pet store
ZooCity, Hvidovre	www.zoocity.dk
Petgo, Gentofte	
Maxi Zoo, Hillerød	Store chain (5 branches)
Amager hundeudstyr	www.hunde-udstyr.dk
Harold Nyborg, Hillerød	Online sale, mail order sale
Brogården, Hørsholm	
"dus med dyrene", Hillerød	Store chain (7 branches)
Stardog	www.stardog.dk
Allé Rideudstyr, Hørsholm	Riding gear store
Heri Rideudstyr, Lyngby	Riding gear store
Hestens Magasin, Slangerup	Riding gear store
Ingdams, Fredensborg	www.ingdams.com
	Riding gear store
Hööks Hestesport Aps, Kolding	Riding gear store Online sale, retail sale

6.3 Products

We have found 455 products of which 315 are for dogs/cats and 140 are for horses (see table 6.4). We estimate that these products cover approximately 75 per cent of the animal care products for horses, cats and dogs sold in Denmark. This includes products that are sold both retail, online, at animal clinics, animal salons and at shows (see table 6.2). It has become evident that the number of animal care products on the Danish market is very large.

Table 6.4 contains a column called "Declaration (+/-)". This information refers to the composition information stated on the product labels. The information has been obtained through store visits, mentioned in table 6.3, or found on the Internet.

The markings signify the following:

- Product labels stating no declaration (composition information) whatsoever. Only used if the packaging or packaging text has been seen.

Products with some form of declaration on the label have been graded as follows:

- + Simple declaration which states e.g. only substances groups such as surfactants, aromatic herbal extracts or softener.
- ++ Slightly more informative declaration, but not complete. However, the individual exact ingredients have been stated such as lavender oil and lanolin.
- +++ Complete declaration of ingredients in the form of an INCI-declaration (see section 6.4.3. on ingredients) as on cosmetic products.

If nothing has been stated in this column, the products have not been found during visits or online.

The last column in table 6.4 states whether composition information has been received for the product by mail/e-mail as a response to our request.

Producer, supplier and distributor names in the product list do not correspond completely with table 6.1. This is because some of the companies we have

contacted by mail/e-mail have not been the primary importers or we have not yet heard from them and thus not been able to identify the products which the companies in question sell.

Producer/supplier/distributor in table 6.4 is either the producer or 1st importer/supplier of the products stated.

Table 6.4. Product list with declaration evaluation as well as any sales numbers.

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
Thordal-Christensen	OWN LABEL		
	Aloe-Vera shampoo		
	Mink Olie shampoo		
	Tea Tree shampoo		Yes
	Mild Hunde shampoo		Yes
	Balsam		
	Tjære shampoo		
Cat and dogstore	LAMBERT KAY		
Cancelled in DK	Fresh ´n clean shampoo		
	Old reliable oatmeal shampoo		
	Fresh ´n clean creme rinse		
	Tangle free creme rinse		
	Fresh ´n clean pet cologne		
	No tangle grooming spray		
	Quick ´n easy shampoo		
VO-Toys, Inc	RING 5		
	Hold Tight		
	Pre-Wash		
	Harsh White Grooming powder		
	Soft White Grooming powder		
	Texture Plus Mousse		
	Coat Gloss		
	Bright & Shine		
	Show Ring		
	Forming Coat Dressing		
	Whitener Cleaner		
	Out Rage		
	Texture plus		
	Burnised Bronze		
	Bright White		
	Mediceptic		
	Puppy Shampoo		
	Protein		
	Black Out		
	Blow Dry		
	Hair Care		
	Ekstra mild shampoo		
Perfect choice-FLP	Aloe VET		
Pet Care Laboratory AB	PCL		
	Dog & Cat Shampoo Vitamin & Silk	++	
	Colour Shampoo for White and Bright	+	
	Colour Shampoo Black		
	Dog & Cat Spray Conditioner	+	
	Dog & Cat Lavender Shampoo	+++	
	Dog & Cat Vitamin & Silk Conditioner	+++	
	Ohyre shampoo		
LEO Animal Health	SPECICARE		

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
AS			
	Aktiv-shampoo til hund		Yes
	Aktiv-shampoo til kat		Yes
	Aktiv-balsamshampoo 2-i-1 til hund/kat		Yes
	Shampoo-sensitiv til hund/kat		Yes
	Shampoo-Extra til tør hud		Yes
	Aktiv-pelsbalsam til hund/kat		Yes
	Potevoks		Yes
	Hundeørerens		Yes
	Hundeørerens til sarte ører		Yes
	Katteørerens		Yes
	Øjebad		Yes
	Forhudrens		Yes
	Tandpasta		Yes
	Hundeørerens (new formulation has not yet been marketed)		Yes
Chrisco A/S	Antikløe shampoo	++	Yes
	Shampoo til hunde	+	Yes
	Shampoo med balsam	++	Yes
Unique pet Products	JEAN PEAU		
	Universal shampoo	=	
	Conditioning shampoo	=	
	Brightener shampoo	=	
	Deep clean shampoo	=	
	Crystal white shampoo	=	
	Excellent shampoo	=	
	Coatcare balsam	=	
	Balsam	=	
	Nature oil	=	
	Crystal oil	=	
	Nature balm	=	
	Eye care	=	
	Volume shampoo	=	
	Shine spray	=	
Vitakraft Danmark AS	VITAKRAFT		
	Potevoks	=	
	Nature Creme Urea	=	
	Nature spray Citronella	=	
	Nature Shampoo eucalyptus	=	
	Nature Shampoo tea tree	=	
	Øjenrens	=	
	Nature shampoo citronella	=	
	Ørerens	=	
	VITA CARE		
	Ausan	=	
	Ohsan	=	
Pitstop for Pets	PETSILK		
	Bright white silk shampoo	+	
	Red enhance silk shampoo	+	
	Gold enhance silk shampoo	+	
	Black silk shampoo	+	
	Conditioning silk shampoo	+	
	Moisturizing shampoo	+	
	Deep cleansing silk shampoo	+	
	Deodorizing silk shampoo	+	
	Bodifying silk shampoo	+	
	Rainforest groomers basic shampoo	=	
	Therapeutic tea tree oil shampoo	+	

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
	Silk & d-limonene shampoo	+	
	Detangling shampoo	-	
	Detangling rinse	-	
	Detangling mist	-	
	Rosemary mint shampoo	+	
	No rinse shampoo	-	
	Bright white silk rinse	+	
	Red enhance silk rinse	+	
	Gold enhance silk rinse	+	
	Black silk rinse	+	
	Conditioning silk rinse	+	
	Moisturizing rinse	+	
	Deodorizing silk conditioner	+	
	Bodifying silk conditioner	+	
	Rainforest groomers basic conditioner	-	
	Rosemary mint rinse	+	
	Strengthening silk rinse treatment	+	
	Leave-in conditioner	+	
	Silk coat oil	+	
	Liquid silk	-	
	Silk sheen	-	
	Show ring mist	-	
	Silk hair control	-	
	Black onyx silk stain remover	-	
	Silk protection sun screen	-	
	Top knot gel	-	
	Silk Texturizing Shampoo til 3 forskellige pelstykker	-	
	Silk Texturizing Rinse til 3 forskellige pelstykker	-	
	Silk Texturizing Hold til 3 forskellige pelstykker	-	
	Fun & Silky Color: Blå, Rød, Gul, Orange, Grøn, Violet, Sort og Hvid	-	
	Hot Spot	-	
	Crisp Breath Fresh Mouth	-	
	Crisp ear cleaner	-	
	White light stain remover	-	
	BIO-GROOM		
	Protein lanolin	-	
	Herbal groom	+	
	Ultra black	-	
	Super white (Coat Brightening Shampoo)	-	
	Bronze lustre (Tearless color Enhancing Shampoo)	-	
	So-gentle (Hypo-Allergenic Shampoo)	-	
	Bio-med shampoo	-	
	Harsh coat	-	
	Econo-groom (Professional Tearless Shampoo)	-	
	Extra body (Shampoo for double coated Breeds)	-	
	Natural oatmeal soothing shampoo	-	
	Super blue plus (Waterless shampoo)	-	
	Fluffy puppy (puppi shampoo)	-	
	Groom 'n fresh (parfume)	-	

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
	Silk (Cream Rinse conditioner)	-	
	Super cream (Coat conditioner)	+	
	Mink oil spray (Coat Glosser)	+	
	Vita oil	+	
	Ear care	+	
	Ear Fresh (Astringent Ear Powder)	+	
	Natural oatmeal (helende creme rinse)	-	
	Super foam	=	
	Coat polish	=	
	Anti-stat	=	
	Spray set (Coat Texturizer and Conditioner)	-	
	Magic black	-	
	Magic white	=	
	Pro-white (Grooming Powder)	=	
	Stain free	=	
Bayer Vet.Danmark	VETRIDERM		
	Vetriderm Intensiv Pleje Shampoo	+++	
	VetriDerm Hypo-allergen Shampoo	+++	
	VetriDerm K-Hex Shampoo	+++	
	VetriDerm K-Hex Spray	+++	
	VetriDerm Ichthyol®-Svovl-Salicyl Shampoo	+++	
	VetriDerm B-Perox Shampoo	+++	
	VetriDerm Intensiv Pleje Balsam	+++	
	VetriDerm Intensiv Fugtigheds Spray	+++	
	VetriDerm Ørerens	+++	
El Kama - Jamodan	EL KAMA		
	Hundeshampoo		
	Skælshampoo		
	Specialshampoo		
	Hud- og pelsolie		
	Efterskyl		
KW hunde og katte artikler	KW		
	Shampooserie i farver til hund og kat	-	
	Protein- og hvalpeshampoo	=	
	Minkolieshampoo til katte og hunde	=	
	Medicinshampoo til katte og hunde	=	
	Tjære/biosvovlshampoo	=	
	Mandelolieshampoo til kat og hund	=	
	Citronshampoo til kat og hund	=	
	Bad & føn	=	
	Grooming pudder	=	
	Pelskur til hunde og katte	=	
	Minkoliespray	=	
	Ren minkolie/pelsolie	=	
	Coat gloss	=	
	Tangle-fix	=	
	Diamantøjne	=	
	Øjebad	=	
	Ørerens	=	
	Potevoks	=	
	Tea Tree Oil Balsam til hunde og katte	-	
	Tea Tree Oil Spray til hunde og	=	

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
	katte		
	Tea Tree Oil Shampoo til hunde og katte	-	
	Terriershampoo (til katte med "fedthaler")	-	
	Hair-care til hunde og katte	-	
	Hundetandpasta	-	
	Potestift	-	
Diafarm AS	LIFE CARE		
	Potevoks	+++	
	Forhudrens		
	Ørerens	+++	
	Hundetandpasta		
	Mundrengøring		
	Øjenbad		
	Øjerens	+	
	Care Shampoo til hunde		Yes
	Care Shampoo 2-i-1 med conditioner		Yes
	Care Balsam		Yes
	Care Shampoo til katte	+++	Yes
	Mild katteøre lotion		
	Tea Tree Oil Shampoo		
KaTaYa's dyrehandel	ALL SYSTEMS		
	Super-cleaning & Conditioning Shampoo		Yes
	Professional Formula Whitening Shampoo		Yes
	Self-Rinsing Conditioning Shampoo & Coat Refresher		Yes
	Crisp Coat Shampoo		Yes
	Pure White Lightening Shampoo		Yes
	Botanical Conditioner		Yes
	Super-Rich Protein Conditioner		Yes
	3 Color Enhancing Botanical Conditioner se nedenstående:		
	Midnight - til sorte og mørke sølvfarvede pelse		Yes
	Red/brown - til abrikos, fawn, gyldne, brune, røde og leverfarvede pelse		Yes
	Platinum - til hvide, creme, lyse gyldne og lyse sølvfarvede pelse		Yes
	Hemectant Oil & Cosmetic Conditioner		Yes
	Lanolinolie		Yes
	Premium Protein Pack & Pre-Chalk		
	Hair Re-Vitalizer & Instant Anti-Static Coat Spray		Yes
	Get It Straight		
	Invisible Hold Setting and Styling Gel		Yes
	Super Whitening Gel		Yes
	Moisturizing Coat Protector & Enhancer		Yes
	Product Stabilizer, Coat Retexturizer and Skin Refresher (Retex)		
	Ear So Fresh		Yes
Skycot Trading	GOLDEN ANIMAL CARE		

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
	Universal shampoo		Yes
	Plejeshampoo		Yes
	Glans-shampoo		Yes
	Snehvide-shampoo		Yes
	Pelsopbyggende - skylning		Yes
	Pels-Balsam		Yes
	Pleje-Lotion		Yes
	Anti-skæl shampoo		Yes
	Volumen shampoo		Yes
	Glans-Spray		Yes
	Modellering-Spray		Yes
	Krystal-Olie		Yes
Cultus Danmark	GROOMERS EDGE		
	Pearl light shampoo		
	Desert Almond shampoo		
	Midnight White shampoo		
	Dynamic duo shampoo		
	Oat mella shampoo		
	Fur(st) aid shampoo		
	Aromatic shampoo		
	Euca-Leuca-lime shampoo		
	Re-fur-bish shampoo		
	Moisture-magic shampoo		
	Keri-cot shampoo		
Pethouse	GIMPET		
	Gimpet Shampoo		
	Gimpet tørshampoo - pudder		
	Udredningsspray		
	Ørerens		
	Øjenrens		
	Iv SAN BERNARD		
	Limone Shampoo		
	Banana Shampoo		
	Mela Verde Shampoo		
	Christal Clean Shampoo		
	Mousette		
	Puppy Don't Cry (hvid)		
	Diamonds (blå)		
	Limone Balsam		
	Banana Balsam		
	Mela Verde Balsam		
	PEK Conditioner		
	Silver Clean Lotion		
	Silver Clean Lotion Ultra Light		
	Mink Oil Shampoo		
	Gloss		
	Sil Plus (hvid & gul)		
	Excellence Poudre de parfum		
	Duftende talkum pudder		
Kemex	GOLD QUALITY		
Kruuse A/S (Pet Partner A/S)	PET CLEAN		
	Hundetandpasta med enzymer	+++	
	Hundetandpasta	+++	
	Tandpasta med leversmag	+++	
	Mundrens	+++	Yes
	Shampoo pelsplejende	+++	Yes
	Shampoo skånsom	+++	
	Ørerens	+++	Yes

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
	Ørerens m. alkohol	+++	Yes
	Potevoks	+	
	Pet active svovl shampoo til hunde	+++	
	AURINET		
	Ørerens	++	
Bogena	Skælshampoo	-	
MEKU	Shampoo til hund og kat med silkeprotein	+++	
	Shampoo til hund og kat med hvedeprotein		
Pharmlett A/S (Kruuse forhandler i DK)	VET' SELECTION		
	Grundshampoo		
Chemvet A/S (Kun salg til dyreklinikker)	EPI-SOOTHE middel mod kløe	++	
	Epi-otic ørerens	++	
	Etilac shampoo	++	
	Sebulux shampoo	++	
	Humilac balsam	++	
	Seboderm shampoo	++	
	Pyoderm specialshampoo		
	PETAG		
	Mirra-coat Væske t/katte		
Stardog	JAGELET		
	Potesalve		
	HOGGENS		
	Balsam med jojoba		
	Shampoo med jojoba		
	Shampoo natur		
	CHAMPION		
	Mild shampoo		
	Skæl shampoo		
	Red-let		
	Minkolie		
	Hvalpeshampoo		
	TEA TREE		
	Lotion		
	Creme		
	Spray		
	Tandpasta		
	Shampoo		
	NR. 1		
	Shampoo		
	Balsam		
OK-gruppen AS	VEREDUS		
Rider sport	HUBERTUS		
	Shampoo		
	Hovolie		
	Hovfedt		
Ridehuset	RENONS		
	Shampoo s		
	CIBOSAN		
	Pelsglans		
Hjørnely Trading A/S	CORNUCRESINE		
	Hovbalsam		
Dan Drift A/S	TENTON (udgået)		
	Shampoo	-	
	Hovolie	-	

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
	Hovfedt	-	
Blue Hors Aps	BLUE HORS		
	Hovcreme Special		Yes
	Hovolie Special	++	Yes
	Hovtjære Special	+	
	Pleje Shampoo	-	Yes
	After Works Shampoo	-	Yes
	Super-Shine	-	Yes
	Super-Clean	-	Yes
	Sommer Gel		
	Hot and Cool	+++	
	Sommer Spray		
	Handy hot		Yes
	Super cool		Yes
	Øjerens		
	Blue lotion		
	Blåstensalve		
Dan rider	LINCOLN		
	Shampoo		
	Hoof Varnish black		
	Event salve		
	Green Hoof Grease		
	TOPFIT		
	Hovbalsam		
	Hovfedt med laurbærolie		
	Køleler		
	Heste Gel		
	Kølelege		
	Pels og manspray		
	Shampoo med Tea Tree Oil		
	Shampoo med Tea Tree Oil – Superwhite	++	
	Tea Tree Oil		
Tophorse A/S	LEOVET		
	Riders magic glans	+++	
	Testsæt 6 produkter: Små flasker med Cold Pack, Propolis Gel, Thermo Massage, Bio-Skin Oil, Wash shampoo og No Rub		
	Tea tree shampoo	+	
	Tea tree plejelotion	+	
	Tea tree olie	+	
	Show shine	+	
	Cold legs		
	Propolis gel		
	Hudbalsam	+++	
	Bio-hudolie	++	
	Vaskeshampoo og care	+	
	Hovolie	++	
	Hovbalsam	++	
	Oliesæbe	-	
	Man liquid		
	Pix hovspray		
TopSport A/S	KIEFFER		
	Hesteshampoo med kamille og pro- tein	-	
	Man/halelotion	-	
	After riding	-	
	Hovplejesalve	-	

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
	Hovolie	-	
	AVOBIT		
	Basis hovpleje	=	
	CARR&DAY&MARTIN		
	Canter coat shine	+	
	Canter coat whitner		
	Canter dream coat		
	Showshine vådserviet		
	Mane & tail conditioner		
	Gallop shampoo	=	
	Gallop plus+ shampoo with Tea tree Oil	-	
	Color enhancing shampoo	=	
	CHARLIE		
	Shampoo		
	Showshine		
Eldorado A/S	PARISOL		
	Hovtjærespray	=	
	Hesteshampoo m. pelsglans	=	
	Man-, hale-, og pels-glans-emulsion 3:1	-	
	Hovolie	=	
	Hovtjære	=	
	Hovfedt	=	
	EQUISEENTIAL		
	Hesteshampoo	+++	
Mustang International Aps	ULTRA		
	Mane & Tail Conditioner		
	Highlighther	=	Yes
	Lazer Sheen	=	Yes
	MUSTANG		
	Klar Highlighther		Yes
	Finish Touch		Yes
	Show Coat		Yes
	Conditioning Shampoo		Yes
	White Shampoo		Yes
	Slim Neck		Yes
	Sheen		Yes
	CHAMPION		
	Pepi-Lite	=	Yes
	ABSORBINE		
	Show Sheen	=	Yes
	Hovlak	+	Yes
	CORONA		
	Salve	++	Yes
	UNKNOWN SERIAL NAME		
	Twinkle Gel		Yes
	Orvus Soap		Yes
	Cowboy Magic Detangler and shine	+++	Yes
Pit stop for pets	BIO GROOM		
	Golden Sheen Shampoo	=	
	Show white Shampoo	=	
	Quick clean	=	
	Coat polish spray	-	
Equihelp	Hovolie		
Hööks hestesport Aps	EKOL		
	Hoof oil	+	

Producer/ supplier/ distributor	SERIAL NAME and products for dogs and cats	Declaration (+/-)	Information received (mail/e-mail)
	Hesteshampoo	+	
	Hovfedt		
	HYDROPHANE		
	Bloom shampoo		
	Bloom and Groom		
	Osmadil body wash		
	Bloom coat gloss		
	HORSEWISE		
	Hovolie		
	Koncentreret hesteshampo		
	Heste pelsglans/balsam		
	Elite heste tørshampo		
	WINDSOR		
	Skimmelshampo		
	Hesteshampo		
	Rosmarinshampo		
	Pelsglans		
	Kølegelé		
	Hovfedt		
	SKILLINGARYD		
	Shampoo		
	EQUIE		
	Creme	+++	
	Lotion	+++	
Brogården	ABSORBINE		
	Bigeloil linament		
	Hooflex-Liquid Conditioner		
	Hooflex- Moisterising Cream		
	Hooflex- Trush Remedy		
	Hooflex- Original Conditioner		
	Hoof Quencher		
	Miracle Groom		
	Show Clean		
	Superpoo		
	BARRIER		
	Aloe Vera gel		
	Avocado Oil		
	Bio-Safe Pels glans- Spray		Yes
	Bio-Safe Pels glans –Gel		
	Grass & Stable Stain Remover		
	Heel to Hoof		
	Hoof oil		
	Lavender wash-Sved skylle		
	Leg Wash		
	Revitalising Wash – Sved skylle		
	Sheath Cleanser		
	Soothing Cream		
	Tangle Free & Silk (Mane, tail & coat conditioner)		

6.3.1 Consumption/sales numbers

It has been very difficult to obtain information on sales numbers and only a very few have been received. On this basis, we have chosen not to include quantity consideration in our evaluation of the market for animal care products. It has not been possible to find any data from Statistics Denmark.

Supermarkets only sell one product series and there is only one supplier for this series. The amount is approximately 10 tonnes of shampoo products.

6.4 Ingredients

6.4.1 Supplier information

The level of detail of the supplier information received varies greatly. It includes everything from complete composition information with CAS numbers and exact content percentages to declarations without CAS numbers and with only substance group designations such as surfactants or ethereal oils. Table 6.5 lists all reported ingredients.

6.4.2 Declarations

The definition used here of a declaration is a text on the labelling which states what the product contains. Table 6.4 states +/- declaration for the products seen during store visits or on photographs on the Internet. These declarations have a very varied degree of detail. This can be seen in table 6.4 where the declarations are graded according to level of detail.

Many products do not state the declaration. Other product series have very detailed declarations. Here the ingredients are listed with INCI names and in descending order of concentration, exactly as required for cosmetic products for humans. INCI is short for "The International Nomenclature of Cosmetic Ingredients"³ and is a common nomenclature used for declarations of ingredients for cosmetic products in the EU.

All substances stated in the declarations have been listed in table 6.5. In the list, the substances are stated with INCI names when possible. This has been done in order to simplify the work in phase 2 of the project where the ingredients and the demands for ingredients and limitations in the current cosmetics legislation were compared.

6.4.3 Specialist literature and Internet information

No information on the composition of animal care products has been found in the toxicological works of reference Ullmans, Kirk Othmer etc. The only specialist literature found is "The Chemical Formula"⁴ from 1936 which describes products such as

- "Dog Deterrent" containing *Naphthalene flakes, Paraffin Wax, Gasoline, Rosin*
- "Dog Mouth Wash" containing *Tincture Iron, Potassium Chlorate, Glycerin, water*
- "Animal Eye Washes" containing *sodium bicarbonate, Borax, Sodium Chloride, Glycerin, distilled water*
- "Liquid soap for dogs and other animals" containing *Palm Kern Oil, Olein, Caustic Soda, Glycerin, Phenol, Eucalyptus perfume oil, water.*

Many of these substances are still found in animal care products today but problematic substances such as borax, naphthalen and sodium chlorate, classified according to the chemical legislation, have not been found during this mapping.

The composition information which can be found on the Internet by the specific products is very broad. For example, there is an indication of "contains herbal extracts and natural vitamins" or slightly fuller descriptions such as "contains oil of bay, glycerol and methionin". Where on the Internet these ingredients have been observed has also been indicated in table 6.5.

Table 6.5. Ingredients stated in animal care products as well as their function in the products. Number of products containing these substances has also been stated.

Chemical name	CAS no.	Function	Number of products
Acetone *	67-64-1	Solvent	2
Allantoin	97-59-6	Softener	6
Almond oil (<i>Prunus dulcis</i>)	-	Scent	2
Aloe barbadensis extract	85507-69-3	Biological additive	6
Aloe Barbadensis gel (aloe vera gel)	-	Softener	8
Alun (double salt of aluminium sulphate and potassium sulphate)	1344-28-1		1
Ammonium Lauryl sulfate *	2235-54-3	Anionic surfactant	2
AMP Isostearoyl Hydrolyzed Collagen	95032-84-1	Softener	1
Amyloglycosidase (glycoamylase)	9032-08-0	Softener, catalyst	1
Antioxidant	?		1
Arnica (Montana) extract	8057-65-6, 68990-11-4	Biological additive	2
Artemisia abrotanum (Southern Wood Extract)	89957-58-4	Biological additive	1
Avocado oil	8024-32-6	Softener	3
B ₁ - vitamin (Thiamine)	59-43-8	Antioxidant	10
B ₂ - vitamin (riboflavin)	83-88-5		10
B ₅ - vitamin (Pantotenic acid)	79-83-4		15
B ₆ - vitamin (Pyridoxine)	65-23-6		1
Babassuamidopropalkonium chloride	124046-05-5	Antistatic agent	1
Balm mint (<i>Melissa officinalis</i>) extract	84082-61-0	Biological additive	1
Balsam terpine oil	?		3
Bay oil	8006-78-8	Scent	1
Behentrimonium Methosulfate	81646-13-1	Antistatic agent, cationic surfactant	1
Benzalkonium chloride *	8001-54-5	Cationic surfactant, preservative	6
Benzophenone-3	131-57-7	UV filter	1
Benzoyl Peroxide *	94-36-0	Disinfectant	1
Benzyl alcohol *	100-51-6	Scent, preservative	5
Beeswax, Cera Alba	8006-40-4, 8012-89-3	Binder, emulsion stabilizer	6
Boric acid *	10043-35-3	pH regulator, biocide	6
Brassica oleifera	-	Biological additive	2
Bromide	?		1
Bromo-5-Nitro-1,3-dioxane *	30007-47-7	Preservative	2
Butylparaben	94-26-8	Preservative	11
C- vitamin (Ascorbic acid)	50-81-7	Antioxidant	3
C.I solvent yellow 14 *	842-07-9	Dye	1
C.I solvent yellow 56	2481-94-9	Dye	1
C12-15 Alkyl benzoate	68411-27-8	Softener	3
Caflon DP530 (blanding af tensider)	?	Surfactants	1
Calcium carbonate	471-34-1	Abrasive	1
Calendula Officinalis extract	84776-23-8	Biological additive	2
Calendula officinalis oil	70892-20-5	Scent	3
Camphor	76-22-2	Scent	
Caprylic/capric triglyceride	65381-09-1, 73398-61-5	Softener	1
Capsicum frutescens	93685-47-3	Biological additive	2
Capsicum frutescens extract	84625-29-6	Biological additive	1
Caramel colour CI 42030 (E150c)	8028-89-5	Dye	1
Carbomer and sodium carbomer	9007-16-3	Emulsion stabilizer, viscosity regulator	2
Carrageenan (<i>chondrus crispus</i>) og sodium carrageenan	9000-07-1, 9061-82-9, 60616-95-7	Biological additive, emulgator, viscosity regulator	2
Carrot extract (<i>daucus carota sativa</i>)	84929-61-3	Biological additive	1
Carrot oil	8015-88-1	Softener	3

Chemical name	CAS no.	Function	Number of products
Carrot Oleo Resin (with Beta-Carotene)	?		1
Cellulose	9004-32-4	Biological polymer, filler, binder	2
Ceteareth-20 *	68439-49-6	Nonionic surfactant, emulgator	1
Cetearyl alcohol	67762-27-0	Viscosity regulator, emulgator	7
Cetearyl glucoside			2
Ceteth-2 *	9004-95-9	Nonionic surfactant	1
Cetrimonium chloride *	112-02-7	Antistatic agent, softener	5
Cetyl alcohol	36653-82-4	Emulsion stabilizer	3
Cetyl stearate	1190-63-2	Softener	2
Chamomile extract (Anthemis nobilis)	84649-86-5	Biological additive	9
Chamomile oil (anthemis nobilis)	8015-92-7	Scent	3
Chlorhexidine Digluconate *	18472-51-0	Disinfectant, preservative	3
Chlorothymol	89-68-9	Disinfectant, preservative	5
Chloroxylenol * (pcmx)	88-04-0	Preservative	4
Citric acid	77-92-9	pH regulator	21
Citronella (cymbopogon Nardus) oil	8000-29-1	Scent	6
Citrus Dulcis	8028-48-6		1
Citrus Grandis	90045-43-5		1
Citrus Nobilis	84929-38-4		1
Clove oil (Nellikeolie)	8000-34-8	Scent	2
Cocamide DEA *	61791-31-9, 68603-42-9	Nonionic surfactant, viscosity regulator, frothing agent	20
Cocamide MEA *	68140-00-1	Nonionic surfactant, frothing agent, viscosity regulator	6
Cocamidopropyl Amine Oxide	68155-09-9	Surfactant, softener	3
Cocoamidopropyl Betaine *	61789-40-0	Amphoteric surfactant	12
Coco-Betaine	68424-94-2	Amphoteric surfactant, softener	1
Cocodimonium Hydroxypropyl hydrolyzed keratin	-	Antistatic agent, softener	1
Coconut oil	8001-31-8	Softener	5
Cod liver oil	8001-69-2	Softener	2
Colloidal oatmeal	-	Absorbing agent	3
Cyclomethicone	69430-24-6	Softener, solvent	3
Dicetyldimonium chloride *	1812-53-9	Antistatic agent	2
Dimethicone	9006-65-9	Protector, softener	3
Dimethiconol	31692-79-2, 70131-67-8	Softener, anti-frothing agent	2
Disodium cocoamphodiacetate *	68650-39-5	Amphoteric surfactant	3
Disodium Coco-glucoside citrate	-	Emulgator	1
Disodium EDTA	139-33-3	Complex binder	1
Disodium Laureth sulfosuccinate *	39354-45-5	Anionic surfactant, emulgator, moistening	3
Disodium undecylenamido MEA-Sulfo-succinate	26650-05-5, 40839-40-5, 37311-67-4, 65277-52-3	Anionic surfactant, hydrotrope (reduces the evaporation of water)	2
DMDM Hydantion	6440-58-0	Preservative	3
Acetic acid *	64-19-7	pH regulator	1
Erythorbic acid (E315) Isoascorbic acid	89-65-6	Antioxidant	1
Ethanol *	64-17-5	Solvent	3
Ethoxylated sorbitan monolaurate	9005-64-5	Nonionic surfactant	
Ethyl acetate *	141-78-6	Solvent	1
Ethylparaben	120-47-8	Preservative	11

Chemical name	CAS no.	Function	Number of products
Eucalyptus citriodora	-	Biological additive	1
Eucalyptus globulus oil	8000-48-4	Scent	3
Evening Primrose Extract (oenothera biennis)	90028-66-3	Biological additive	1
F.D. & C. Red NO 40 (CI 16035)	25956-17-6	Dye	2
F.D. & C. Yellow NO.5 (CI 19140) Tatrazin	1934-21-0	Dye	2
F.D. & C Blue NO.1 (CI 42090)	3844-45-9	Dye	2
F.D. & C.#33	?	Dye	1
F.D.& C Yellow NO.6	2783-94-0	Dye	1
Fennel extract (foeniculum vulgare)	84625-39-8, 85085-32-2	Biological additive	1
Formaldehyde *	50-00-0	Preservative	2
Fucus Serratus extract	94167-02-9	Biological additive	2
Glycerin	56-81-5	Solvent, moistener	37
Glyceryl linolenate	18465-99-1	Emulgator, softener	1
Glyceryl stearate	31566-31-1	Emulgator	1
Glycol distearate	627-83-8	Softener, viscosity regulator	6
Glycose Oxidase		Catalyst	1
Grape extract (vitis vinifera)	84929-27-1	Biological additive	1
Grape Seed oil (vitis vinifera)	8024-22-4, 85594-37-2	Softener	1
Hamamelis extract (Hamamelis virginiana)	-	Biological additive	2
Honey extract	91052-92-5	Biological additive	2
Hops extract /Humulus Lupulus)	8016-25-9, 8060-28-4	Biological additive	5
Hordeum Vulgare	-	Biological additive	2
Horehound Extract (marrubium vulgare)	84696-20-8	Biological additive	1
Hydrolyzed Animal Protein	?	Softener	1
Hydrolyzed collagen	92113-31-0	Softener	5
Hydrolyzed Hair Keratin	65997-21- 9,73049-73- 7	Softener	1
Hydrolyzed Silk	96690-41-4	Softener	3
Hydrolyzed Vegetable Protein	100209-45- 8	Softener	1
Hydroxypropyl guar	39421-75-5	Binder, viscosity regulator	1
Hydroxypropyl methylcellulose	9004-65-3	Binder, film agent, viscosity regulator	1
Hypericum Perforatum extract	84082-80-4	Biological additive	1
Hypericum perforatum oil (St.John`s Wort Oil) Perikon oil	68917-49-7	Biological additive	3
Iron oxides, yellow or red (E172)	1317-61-1	Dye	1
Isobutane *	75-28-5	Propellant	1
Isobutylparabene	4247-02-3	Preservative	6
Isododecane	141-70-8	Solvent	1
Isohexadecane	4390-04-9	Solvent, softener	1
Isopropanol amine	78-96-6	pH-regulator	2
Isopropyl alcohol *	67-63-0	Solvent	9
Isopropyl myristate	110-27-0	Softener	5
Jojoba oil	61789-91-1	Softener	14
Juniperus communis oil (enebær)	73049-62-4	Scent	1
Kaolin	1332-58-7	Abrasive, absorbing	2
Keratin	68238-35-7	Softener	1
Coal tar	65996-93-2		1
Lactic acid	50-21-5	pH regulator	6
Lanolin alcohol	8027-33-6	Emulsion stabilizer, viscosity regulator	4
Lanolin, lanolin oil	8006-54-0, 70321-63-	Emulgator, softener	13

Chemical name	CAS no.	Function	Number of products
	0.8038-43-5		
Lauramide DEA *	120-40-1	Nonionic surfactant	2
Laurel oil (laurus nobilis)	8002-41-3	Scent	1
Laureth-13 *	9002-92-0	Nonionic surfactant, emulgator, softener	1
Laureth-2 *	68439-50-9	Nonionic surfactant, emulgator, softener	3
Laureth-3 *	3055-94-5	Nonionic surfactant, emulgator, softener	1
Laureth-4 *	5274-68-0	Nonionic surfactant, emulgator, softener	4
Laureth-9 *	3055-99-0	Nonionic surfactant, emulgator, softener	4
Lauric acid	143-07-7	Surfactant, frothing agent	4
Lauryl Methyl Gluceth-10 Hydroxypropyl dimonium Chloride	123005-57-2	Antistatic agent	1
Lavender extract (lavandula angustifolia)	90063-37-9, 84776-65-8	Biological additive	6
Lavender oil (Lavendula angustifolia)	8000-28-0	Scent	3
Lecithin	8002-43-5	Softener	6
Lemon oil	8008-56-8	Scent	1
Lemongrass extract (Cymbopogon schoenanthus)	89998-14-1	Biological additive	2
Linoleamide DEA *	56863-02-6	Nonionic surfactant, frothing agent, viscosity regulator	1
Linoleic Acid	60-33-3	Frothing agent	3
Linolenic Acid	463-40-1	Frothing agent	3
Linseed oil	8001-26-1	Softener	3
Liquide Paraffin	8042-47-5		2
Magnesium Aluminium silicate	12199-37-0	Viscosity regulator, absorbing	1
Magnesium sulfate (bitter salt)	7487-88-9	Bulking agent	1
Matricaria (chamomilla recutita) extract	84082-60-0	Biological additive	6
MEA-lauryl sulfate	4722-98-9	Anionic surfactant	1
Melaleuca Alternifolia (Tea Tree)	85085-48-9	Softener, biological additive	9
Melaleuca leucadendron	-	Biological additive	1
Mentha Viridis (spearmint) oil	-	Biological additive	12
Menthol	2216-51-5	Scent	8
Methyl Paraben	99-76-3	Preservative	21
Methyl violet dye	?		1
Methylchloroisothiazolinone (part of Kathon) *		Preservative	8
Methyldibromo glutaronitrile *	35691-65-7	Preservative	8
Methylisothiazolinone (part of Kathon) *		Preservative	8
MG laureth sulfate	?		2
Mineral oil			4
Mink oil (Mustela oil)	8023-74-3	Softener	10
MIPA-lauryl Sulfate	83016-76-6	Anionic surfactant	1
Monoethanol ammonium lauryl sulfate (MEA Lauryl Sulfate)	4722-98-9	Anionic surfactant	6
Nettle extract (Urtica dioica)	84012-40-8	Biological additive	7
Nipasept parabenblanding (methyl-ethyl- and propylparaben)		Preservative	1
Oat protein (Avena sativa)	-	Softener	1
Octyl Dodecyl Myristate	83626-43-1, 22766-83-2	Softener	1
Octyl Methoxycinnamate	5466-77-3	UV filter	2
Octyl palmitate	29806-73-3	Softener	1
Octyldodecyl Myristate	83826-43-1,	Softener	1

Chemical name	CAS no.	Function	Number of products
	22766-83-2		
Oil soluble blue dye	?	Dye	2
Oil soluble yellow dye	?	Dye	1
Olefinsulfonate *			1
Oleic Acid	112-80-1	Frothing agent	3
Olive oil	8001-25-0	Softener	3
Oxyquinoline	148-24-3	Stabilizing agent	1
Palmitic Acid	57-10-3	Frothing agent, emulgator	3
Panthenol	81-13-0	Softener	9
Paraffin	8002-74-2	Viscosity regulator, softener	
Paraffinum Liquidum	8012-95-1	Softener, solvent	2
Perfume	-		21
Paraffin wax	8002-74-2		2
Passionflower extract (passiflora quadrangularis)	84012-31-7	Biological additive	1
Patent blue V (E 131) (CI 42051)	?	Dye	2
Peanut Oil	8002-03-7	Softener	
PEG 15 Glyceryl Isostearate	68958-58-7	Nonionic surfactant	4
PEG 20 sorbitan laurate	9005-64-5	Nonionic surfactant	1
PEG 40 Hydrogenated Caster oil	61788-85-0	Emulgator	1
PEG -60 Almond Glycerides	124046-50-0	Emulgator	3
PEG- 7 Glyceryl Cocoate	66105-29-1	Nonionic surfactant	3
PEG-100 Stearate	9004-99-3	Nonionic surfactant	1
PEG-120 Methyl glucose Dioleate	86893-29-8	Viscosity regulator	3
PEG-150	25322-68-3	Nonionic surfactant	1
PEG-15-coco Polyamine	-	Antistatic agent, emulgator	2
PEG-400 Dioleate	9005-07-6	Nonionic surfactant	1
Pelargonium graveolens		Biological additive	1
Pennyroyal oil (menthe pulegium)	8007-44-1	Scent	1
Peppermint oil (Mentha Piperita)	8006-90-4	Scent	3
Petrolatum	8009-03-8	Softener	1
Phenethyl alcohol (2-phenylethanol)	60-12-8	Preservative	1
Phenol *	108-95-2	Preservative	1
Phenoxyethanol *	122-99-6	Preservative	24
Polydimethylsiloxane			1
Polyquaternium-10	81859-24-7	Antistatic agent, softener, cationic surfactant	6
Polyquaternium-11	53633-54-8	Antistatic agent, softener, cationic surfactant	1
Polysorbate 20	9005-64-5	Nonionic surfactant	5
Polysorbate 80 (E 433)	9005-65-6	Emulgator	3
Potassium iodide	7681-11-0	Additive	1
Potassium sorbate (E202)	590-00-1	Preservative	2
PPG-12-PEG-65 lanolin oil	-	Softener, emulgator	2
PPG-20 methyl Glucose Ether	-	Nonionic surfactant, softener	1
Preservative	-		4
Proline	147-85-3	Softener	2
Propane/butane *	74-98-6/106-97-8	Propellant	2
Propylene glycol	57-55-6	Moisturizer, solvent	23
Propylparaben	94-13-3	Preservative	18
PVM/MA Copolymer	9011-16-9	Film agent	1
PVP- iodine	25655-41-8	Disinfectant	1
Rosemary oil (rosmarinus officinalis) and extract	8000-25-7	Scent	20
Sage extract (salvia officinalis)	84082-79-1	Biological additive	3
Sage oil (salvia officinalis)	8022-56-7,	Scent	1

Chemical name	CAS no.	Function	Number of products
	84776-73-8		
Salicylic acid	69-72-7		4
Seaweed	?		4
Sesame oil (sesamum indicum)	8008-74-0	Softener	1
Shark liver oil (hajleverolie)	68990-63-6	Softener, solvent	1
Silica	7631-86-9	Abrasive, filler, corrosion inhibitor	3
Silicone emulsion	-	Solvent	3
Silk amino acids (protein)	-	Softener	26
Sodium alkyl ethersulfate *	-	Anionic surfactant	2
Sodium and Magnesium salts of fatty alcohol ethersulfates	-		2
Sodium benzoate	532-32-1	Preservative	4
Sodium Borate	1303-96-4	pH regulator	2
Sodium Carbonate Peroxyhydrate	?		1
Sodium Cetearyl Sulfate *	68955-20-4	Emulgator	1
Sodium chloride	7647-14-5	Viscosity regulator	19
Sodium citrate	6132-04-3	pH regulator	1
Sodium Cocoglucoside tartrate	?		1
Sodium hydroxide *	1310-73-2	pH regulator	6
Sodium lactate	72-17-3	pH regulator, moistener	3
Sodium Laureth sulfate *	68891-38-3, 9004-82-4	Anionic surfactant	23
Sodium Lauroyl Sarcosinate *	137-16-6	Anionic surfactant	1
Sodium Lauryl Sulfate *	151-21-3	Anionic surfactant	5
Sodium Monofluorophosphate	10163-15-2, 7631-97-2	Biocide	1
Sodium PCA	28874-51-3	Softener, moistener	4
Sodium Saccharin	128-44-9	Flavour	1
Sodium Trideceth sulfate *	25446-78-0	Anionic surfactant	1
Sorbitol	50-70-4	Moistener, flavour	7
Soybean oil (Glycine soya)	8001-22-7	Softener	3
Stearic Acid	57-11-4	Frothing agent, emulgator	3
Stearyl alcohol	112-92-5	Emulsion stabilizer, emulgator, viscosity regulstor	1
Stearylamidopropyldimethylamine		Cationic surfactant	2
Stearylkonium chloride			1
Stockholm Tar	8002-29-1		2
Sucrose cocoate (mixture of sucrose esters of coconut Acid)	-	Emulgator, softener	1
Sulphur	7704-34-9		3
Synocryl 9045C/91235	64742-95-6		1
Tea Tree oil		See melaleuca alternifolia	1
Turpentine oil	?		
Tetrahydroxypropyl Ethylendiamine	102-60-3	Complex binder	1
Tetrasodium EDTA *	64-02-8	pH regulator, complex binder	3
Thyme extract (thymus vulgaris)	84929-51-1	Biological additive	3
Thymol (5-methyl-2-isopropyl -1-phenol) *	89-83-8	Scent	1
Tocopherol (vitamin E)	59-02-9	Antioxidant	18
Tocopheryl acetate	7695-91-2	Antioxidant, softener	5
Triclosan *	3380-34-5	Preservative	1
Triethanolamine *	102-71-6	pH regulator	4
Trisodium EDTA	150-38-9	Complex binder	1
Tromethamine	77-86-1	pH regulator	1
Urea (carbamide)	57-13-6	Moistener, pH regulator	2
UV blocker	-		2
Vegetable oils	-		1
Vitamin A (Retinol)	11103-57-4		9
Vitamin D (Calciferol)	50-14-6		9

Chemical name	CAS no.	Function	Number of products
Wheat Amino Acid (protein)	94350-06-8	Film agent, softener, biological additive	2
Wheat germ oil (triticum vulgare)	8006-95-9, 68917-73-7	Softener	3
White Petroleum Jelly (paraffin wax), petrolatum (petroleum), clay-treated	100684-33-1		3
Yarrow extract (achillea millefolium)	84082-83-7	Biological additive	1
Yucca Vera	90147-57-2	Moistener	1
Zinc Sulfate	7446-20-0	Disinfectant	3
Zink oxide (CI 77947)	1314-13-2	Dye	1
Zink ricinoleate	13040-19-2	Anti-clotting agent	1

* Classified substances according to Statutory Order no. 439 of 3 June 2002 from the Ministry of Environment on the List of dangerous substances.

297 substances were found in the 157 products for which the product composition is known. The substance groups “perfume” and “preservative” are not included here.

Column 3 of table 6.5 describes the function of the substance in the product. The functions are the same as in cosmetic products for humans. This information is not exhaustive, i.e. there may be other functions than those stated here. Biological additive, which is mentioned as a function for the plant extracts, includes cosmetic ingredients that derive from plants and that are used for various purposes. The function “plant material” has been stated when there is no knowledge about which “part” of the plant has been used.

The last column of table 6.5 states how many products out of the 157 the particular substance is found in. The better part of the substances are also used in cosmetics.

Substances, which are found with the greatest frequency, are listed in table 6.6.

Table 6.6 Most frequently used substances in the animal care products

Chemical name	CAS no.	Frequency in products
Glycerin	56-81-5	37
Silk amino acid (protein)	-	26
2-phenoxyethanol	122-99-6	24
Sodium laureth sulfate	68891-38-3, 9004-82-4	23
Propylene glycol	57-56-6	23
Citric acid	77-92-9	21
Methyl paraben	99-76-3	21
Cocamide DEA	61791-31-9, 68603-42-9	20
Rosemary oil and extract (rosmarinus officinalis)	8000-25-7	20
Sodium chloride	7647-14-5	19
Propyl paraben	94-13-3	18
Tocopherol (vitamin E)	59-02-9	18
B5 vitamin (Pantotenic acid)	79-83-4	14
Jobba oil	61789-91-1	14
Lanolin	8006-54-0	13
Cocoamidopropyl betaine	61789-40-0	12
Mentha viridis (Spearmint oil)	-	12
Ethyl paraben	120-47-8	11
Butyl paraben	94-26-8	11

Most of the substances in table 6.6 are not limited according to the chemical and cosmetic legislations with the current use in the products.

However, several preservatives have been used for which there are limitations in use in cosmetics. Parabens may be used in concentrations of up to 0.4% as single substances and 0.8% as a mixture of parabens as can be seen from table 6.2.1. 2-phenoxyethanol is allowed in a concentration of up to 1% in cosmetic products. The concentration used in these animal care products has been stated/analysed to be less than 0.6%. See chapter 7.

7 Ingredients and legislation

Animal care products are chemical products and must therefore follow the legislation for chemical products⁶ in Denmark.

Animal care products are not regulated according to the cosmetics legislation. A number of these products are, however, constructed analogous to similar cosmetic products. From the knowledge we have obtained about ingredients and products through this project we can see that there also seems to be doubts or insecurities among the suppliers about how these products are regulated. Some of the product labels contain an INCI declaration (declaration of contents) as required by the cosmetics legislation. Other products state no ingredients on the label that may be correct according to the chemical legislation if there is no requirement for product classification according to this legislation. However, our knowledge of the composition implies that for several products there probably is a demand for product registration and indication of PR-number (product registration number) on the label if the products are sold for commercial use at e.g. dog salons and animal clinics and contains dangerous substances.

7.1 The chemical legislation

Like all other chemical products, animal care products are covered by the EPA regulations on classification and labelling⁶. This means that if an animal care product contains one or more substances found on the EPA list of hazardous substances⁷ above a certain concentration, there will be a demand for labelling of the product stating ingredients, hazard symbol as well as risk and safety phrases. This will include products for both retail and commercial use.

If these hazard labelled products are sold commercially, e.g. to dog salons, animal clinics etc., there will also be a demand for preparation of safety data sheets. The importer, producer or supplier of hazardous products for commercial use must furthermore register the product with the Danish Product Register before the product is put on the market.

Through this project we have only obtained knowledge about 2 animal care products with a PR-number.

The ingredients which are classified (* in table 7.5), partly according to the Statutory Order on classification and labelling of hazardous substances and products from the Environmental Protection Agency and partly from a self classification, are listed in table 7.1. The classification of the individual substances can also be seen from table 7.1.

The classification of the surfactants is derived from CESIO⁸, which is the surfactant producers' own classification of this substance group.

Substances, which have only been identified in the analyses mentioned in chapter 8, such as scents, are not listed in table 7.1. This table only includes ingredients for which we have obtained knowledge through written contact to suppliers/distributors or from labels on products seen in various stores.

It cannot be excluded that there are substances on the gross list, table 7.5, which through a thorough toxicological evaluation will end up with a self classification and which should therefore be listed in table 7.1 of classified substances. It is, however, outside the scope of this project to carry out toxicological evaluations of the substances.

It should be noted that these are health classifications only. Environmental classifications for the substances in animal care products are not included in table 7.1.

Table 7.1 Classified substances and classification according to the Order on the list of hazardous substances and self classifications.

Chemical name	CAS no.	Classification
Acetone	67-64-1	F; R11 Xi; R36 R66 R67
Ammonium lauryl sulfate	2235-54-3	Xi; R38-41
Benzalkonium chloride	8001-54-5	Xn; R21/22 C; R34
Benzoyl Peroxide	94-36-0	E; R2 Xi; R36 R43
Benzyl alcohol	100-51-6	Xn; R20/22 (Xi; R43)
Boric acid	10043-35-3	Rep 3; R62 R63
Bromo-5-Nitro-1,3-dioxane	30007-47-7	Xn; R22 Xi; R36/38
C.I. solvent yellow 14 (1 phenylazo-2-naphthol)	842-07-9	Carc 3, R40 Mut 3 R68 R43
Ceteth-2	9004-95-9	Xi; R41
Cetareth-20	68439-49-6	Xn; R22 Xi; R41
Cetrimonium chloride	112-02-7	Xn; R22 Xi; R38-41
Chlorhexidine Digluconate	18472-51-0	Xi; R41
Chloroxylonol	88-04-0	Xn; R22 Xi; R36/38-R43
Cocamide DEA	61791-31-9, 68603-42-9	Xi; R38-41
Cocamide MEA	68140-00-1	Xi; R41
Cocoamidopropyl Betaine	61789-40-0	Xi; R36
Dicetyldimonium chloride	1812-53-9	Xn; R22 C; R34
Disodium cocoamphodiacetate	68650-39-5	Xi; R36
Disodium Laureth sulfosuccinate	39354-45-5	Xi; R36
Acetic acid	64-19-7	R 10 C; R35
Ethanol	64-17-5	F; R11
Ethylacetate	141-78-6	F; R11 Xi; R36 R66 R67
Formaldehyde	50-00-0	Carc 3 R40 T; R23/24/25 C; R34 R43
Isobutane	75-28-5	Fx; R12
Isopropyl alcohol	67-63-0	F; R11 Xi; R36 R67
Lauramide DEA	120-40-1	Xi; R38-41
Laureth-13	9002-92-0	Xi; R41
Laureth-2	68439-50-9	Xi; R41
Laureth-3	3055-94-5	Xi; R41
Laureth-4	5274-68-0	Xi; R41
Laureth-9	3055-99-0	Xn; R22 Xi; R41
Linoleamide DEA	56863-02-6	Xi; R41
Methylchlorisothiazolinone og Methylisothiazolinone i forholdet 3:1	55965-84-9	T; R23/24/25 C; R34 Xi; R43
Methyldibromo glutaronitrile	35691-65-7	Xn; R20/22 Xi; R36/38
Olefinsulfonate	?	Xi; R38-41
Phenol	108-95-2	T; R24/25 C; R34
Phenoxyethanol	122-99-6	Xn; R22 Xi; R36
Propane/butane	74-98-6/106-97-8	Fx; R12
Sodiummalkyl ethersulfate	?	Xi; R38-41
Sodium Cetearyl Sulfate	68955-20-4	Xi; R38-41
Sodium hydroxide	1310-73-2	C; R35
Sodium Laureth sulfate	68891-38-3, 9004-82-4	Xi; R38-41
Sodium Lauroyl Sarcosinate	137-16-6	Xi; R41
Sodium Lauryl Sulfate	151-21-3	Xn; R22 Xi; R38-41
Sodium Trideceth sulfate	25446-78-0	Xi; R38-41
Tetrasodium EDTA	64-02-8	Xn; R22 Xi; R36

Chemical name	CAS no.	Classification
Thymol	89-83-8	Xn; R22 C; R34

Chemical name	CAS no.	Classification
Triclosan	3380-34-5	Xi; R36/38
Triethanolamine	102-71-6	Xi; R36 R43

Ingredients classified according to the Statutory Order on the list of hazardous substances⁷. Included are also future EU classifications such as boric acid.

* Ingredients classified according to CESIO⁸

☐ Self classifications (e.g. raw material supplier classifications)

Of the classified substances, special attention should be paid to the substances classified as sensitizing (Xi; R43 or R42) and the substances with other long-term effects (e.g. carcinogenic). These are the substances in table 7.2.

Table 7.2 Substances with long-term effects

Chemical name	Effect
Chlorxylenol	Sensitizing
Kathon	Sensitizing
Formaldehyde	Sensitizing, carcinogenic (cars 3)
Triethanolamin	Sensitizing
Boric acid	Damaging to reproduction (Rep 3)
CI solvent yellow 14	Sensitizing, carcinogenic (cars 3), mutagenic(mut 3)

Boric acid is included in the 29th adaptation to the Substance Directive (67/548/EEC). The adaptation has not yet been passed, but boric acid has been recommended for the classification: Rep3 R62 (Possible risk of impaired fertility) and R63 (Possible risk of harm to the unborn child).

The chemical legislation contains special labelling demands for products containing sensitizing substances. According to the chemical legislation, a content of sensitizing substances must be stated with a special phrase when the products contain more than 0.1% even though the sensitizing substance in itself does not lead to a classification of the product. This is also the case for animal care products. The legislation requires the following phrase on the label if the product contains a sensitizing substance in a concentration of 0.1-1.0% unless the list of hazardous substances has established a lower limit. The phrase is: ”Indeholder (navn på sensibiliserende stof). Kan udløse allergisk reaktion.” (Contains (name of sensitizing substance). May produce an allergic reaction). At concentrations equal to or greater than 1%, the product must be classified and labelled with either R43 (May cause sensitisation by skin contact) or R42 (May cause sensitisation by inhalation)

We have no knowledge about the exact concentration for any of the substances classified with R43.

The substances boric acid/borax, phenol, formaldehyde and benzyl alcohol, which have been found during this mapping, are on the ”List of unwanted substances⁹”. The list of unwanted substances is a signal list of chemicals for which the long-term use should be reduced or discontinued.

A large number of perfumes are also included on the EPA list of unwanted substances. Among the scents mentioned, only benzyl alcohol can be found in the animal care products mapped during phase 1 of the project. In the animal care products for which we know the composition, the scents are mainly natural plant oils such as lemon oil, eucalyptus oil, oil of cloves, oil of bay, almond oil etc. Further information about scents can be found in chapter 8.

Many of the animal care products for which we have obtained information contain parabens. Investigations show that the preservatives parabens, particularly butyl parabene, have certain hormone disruptive effects. Butyl parabene has shown unwanted effects on the reproductive system in mice after oral intake. There are however no data indicating that use of butylparabene in cosmetic product are problematic. Non of the parabenes are classified on the list of hazardous substances. Generally, parabenes are considered to have low toxicity and to be relative non-irritating and thus to be among the least sensitizing preservatives.

For benzophenone-3 there are examples of contact allergy when using sunscreen lotion containing this UV filter. According to the EPA guideline for self-classification of hazardous substances, benzophenone-3 has been evaluated as sensitizing.

Many products for both dogs/cats and horses contain tea tree oil. The literature describes cases where application to the skin of animals has lead to effects on the central nervous system. Particularly, this is considered to be a problem in cats who may risk ingesting the oil when cleaning their fur¹⁰.

Most of the animal care products contain surfactants. Most of these substances are classified as irritating to skin (R38) and risk of serious damage to eyes (R41). However, it is expected that these substances are not contained in the products in concentrations that will lead to a classification of the products. The concentration has to be relatively high to result in a classification of the product (10-25%).

The products which contain the substances in table 7.1 in a concentration of more than 1% must be registered and a safety data sheet must be prepared if the products are sold for commercial use, i.e. for animal salons or clinics.

7.2 The cosmetics legislation

One of the goals of phase 2 of the project has been to evaluate the ingredients in the animal care products according to the current cosmetics legislation, i.e. to determine whether the products comply with the current cosmetics legislation which is the Statutory Order on cosmetic products⁵, which implements the EU directive¹¹ in the field. The Order on cosmetics sets up a number of limitations in use for what cosmetic products may contain and in which concentrations. The Order contains lists of the following:

- Substances that may not be contained in cosmetic products annex 2.
- Substances that may be used in accordance with the established limitations and conditions annex 3.
- Dyes that may be contained in cosmetic products, annex 4.
- Allowed preservatives in cosmetic products, annex 5.
- Allowed UV filters in cosmetic products, annex 6.

The list in annex 2 is a negative list which i.a. contains preservatives, dyes or UV filters that are forbidden in cosmetic products. When going over all the ingredients, only 3 substances were found on the list of substances that are not allowed in cosmetic products. These were oil of bay (*Laurus nobilis*), benzoyl peroxide and coal tar.

The remaining annexes are either limitation lists or positive lists. The positive lists contain substances that may only be used within a certain substance group, e.g.

dyes. The limitation list contains substances that may only be used under certain conditions, e.g. in a certain concentrations and in certain product types.

The ingredients that have been mapped in the animal care products have been evaluated according to each of these lists.

The following tables are divided into preservatives, dyes, substances with limitations and UV filters, respectively. The substances listed have been compared to the demands from the Order on cosmetics for these particular substances.

This project has not examined whether the animal care products are labelled correctly on the packaging according to the cosmetics legislation or whether the products that have a complete declaration of contents have followed the current regulations for declaration of ingredients in cosmetics.

7.2.1 Preservatives

The purpose of adding preservatives is to avoid bacterial growth in the products and thus prolonging their durability.

Table 7.3 lists the preservatives found in the animal care products. The table also states the highest allowed concentration of the substance in cosmetic products, any limitations and demands when used in cosmetic products as well as mandatory instructions and warnings on the label if this appears from annex 5 of the Order on cosmetics.

The last column of table 7.3 contains the concentrations in interval or with less than (<). These are the concentrations informed by the supplier/producers. The concentration has not been stated for all preservatives – in which case a ? has been stated.

Table 7.3 Preservatives identified in animal care products. The substances marked with # are not found in annex 5 (the list of allowed preservatives in cosmetics).

Chemical name	CAS no.	Number of products	Highest allowed concentration and limitations and demands	Mandatory instructions and warnings on the label	Known concentration (%) in products mapped
Benzalkonium chloride	8001-54-5	6	0.1%	Avoid contact with the eyes	0.01-0.1
Benzoyl Peroxide #	94-36-0	1			?
Benzyl alcohol	100-51-6	5	1%		?
Bromo-5-Nitro-1,3-dioxane	30007-47-7	2	0.1% May only be used in products that are rinsed off after use. Avoid formation of nitrosamines.		<0.05
Butylparaben	94-26-8	11	0.4% (acid) *		0.1-0.2
Cetrimonium chloride	112-02-7	5	0.1%		?
Chlorhexidine Digluconate	18472-51-0	3	0.3% expressed in chlorhexidin		0.05-0.1
Chlorothymol #	89-68-9	5			?
Chloroxyleneol (pcmx??)	88-04-0	4	0.5%		< 0.1
DMDM Hydantion	6440-58-0	3	0.6%	"Contains formaldehyde" if the concentration of formaldehyde in the finished product exceeds 0.05%	0.2-0.3
Ethylparaben	120-47-8	11	0.4% (acid) *		0.1-0.2
Formaldehyde	50-00-0	2	0.2% (except for oral care) 0.1%(oral care) May not be used in aerosols	"Contains formaldehyde" if the concentration of formaldehyde in the finished product exceeds 0.05%	?
Isobutylparaben	4247-02-3	6	0.4% (acid) *		0.1-0.2
Laurel oil (laurus nobilis) #	8002-41-3	1			?
Methyl Paraben	99-76-3	19	0.4%(acid) *		0.1-0.2
Methylchloroisothiazolinone (part of Kathon)		8	0.0015% (15ppm) of a mixture in the ration of 3:1 of Methylchloroisothiazolinone and Methylisothiazolinone		
Methyldibromoglutaronitrile	35691-65-7	8	0.1% (Note: changed in future revision of the Directive on cosmetic products.)		<0.1
Methylisothiazolinone (part of Kathon)		8	See Methylchloroisothiazolinone		
Parabenmixture (methyl- ethyl- and propylparabene) (Nipasept)		1	0.8% (acid) *		
Phenethyl alcohol (2-phenylethanol) #	60-12-8	1			<0.5
Phenol #	108-95-2	1			?

Chemical name	CAS no.	Number of products	Highest allowed concentration and limitations and demands	Mandatory instructions and warnings on the label	Known concentration (%) in products mapped
Phenoxyethanol	122-99-6	24	1.0%		<0.6
Potassium sorbate (E202)	590-00-1	2	0.6% (acid)		?
Preservative		4			
Propylparaben	94-13-3	18	0.4% (acid) *		0.1-0.2
PVP- iodine #	25655-41-8				?
Salicylic acid	69-72-7	4	0.5% (acid) Except for shampoo, may not be used in products for children below the age of 3.	May not be used for children under the age of 3.	?
Sodium benzoate	532-32-1	4	0.5% (acid)		?
Triclosan	3380-34-5	1	0.3%		<0.3

* as 4-hydroxybenzo acid

The substances that in table 6.5 have stated preservative as a function and that are not present in annex 5 of the Order on cosmetics, have been marked with an #. These substances are not allowed in cosmetic products as preservatives. 4 products have unspecifically stated "preservative".

It can be seen from table 7.3 that the most frequently used preservatives are parabenes and phenoxyethanol (24 products) followed by Kathon (8 products) and methylidibromoglutaronitril (8 products).

In the products for which we have knowledge of the exact concentration of the preservative, this concentration is below the highest allowed concentration in cosmetics. We have no knowledge of the exact content concentrations in the majority of the products, but it nonetheless gives a picture of how and which preservatives are used in this type of product.

Methylidibromoglutaronitril is a preservative with a broad use. An increasing number of eczema cases are seen with contact allergy caused by cosmetic products preserved with this product. The EU Commission has recently prohibited the use of methylidibromoglutaronitril in the type of cosmetic products that are not rinsed off, the so-called leave-on products. The Directive has come into force but has not yet been implemented in the Danish legislation. This will take place in 2005.

Some of the substances have special limitations in the sense that they may not be used along with other chemical substances. Along with alkanolamines or fatty acid alkanolamides, nitrosating agents may form carcinogenic nitrosamines. According to annex 2, nitrosamines are not allowed in cosmetic products. Nitrosating agents include e.g. the preservatives bromo-5-nitro-1,3 dioxan or bronopol (2-Bromo-2-nitropropane-1,3-diol). Alkanolamines include e.g. triethanolamine and fatty acid alkanolamides such as cocamide DEA. 4 products contain triethanolamin, 2 products contain bromo-5-nitro-1,3-dioxan, 20 products contain cocamide DEA and 4 products contain cocamide MEA.

In the 157 products for which we have a reasonable knowledge of the composition, we see none of these chemical substances in the same product. We can therefore conclude that there is no risk of nitrosamine formation in these products.

Only one formaldehyde releaser has been observed among the known preservatives, namely DMDM hydantoin. This substance may cause an allergic reaction due to the release of formaldehyde, but it has not in itself been evaluated as sensitizing.

7.2.2 Dyes

The purpose of adding dyes is to give the product a more inviting appearance. Generally, dyes have no toxicological effect in the product, but they may have been added to certain shampoos to cause a darkening effect in the animal fur.

Table 7.4 lists the dyes found in the animal care products. The allowed areas of use in cosmetics for the individual dyes have been stated as well. In addition, there is an indication of whether annex 4 contains limitations or demands for the use of the dyes.

Annex 4 is a positive list of allowed dyes in cosmetics.

Table 7.4 Dyes identified in animal care products.

Chemical name	CAS no.	Number of products	Areas of use as well as limitations or demands
Caramel colour 42030 (E150c)	8028-89-5	1	Allowed in all cosmetic products. *
F.D. & C. Red No 40 (CI 16035)	25956-17-6	2	Allowed in all cosmetic products
F.D. & C. Yellow NO.5 (CI 19140) (E 102)	1934-21-0	1	Allowed in all cosmetic products *
F.D. & C Blue No.1 (CI 42090)	3844-45-9	2	Allowed in all cosmetic products
F.D. & C.#33 (stated in this way by supplier)	?	1	
F.D. & C Yellow NO.6 (CI 15985) E110	2783-94-0	1	Allowed in all cosmetic products *
Iron oxides, yellow or red (E 172)	1317-61-1	1	Allowed in all cosmetic products *
Oil soluble blue dye	?	2	
Patent blue V (E 131) (CI 42051)		2	Allowed in all cosmetic products *
Zink oxide (CI 77947)	1314-13-2	1	Allowed in all cosmetic products
CI solvent yellow 14 (CI 12055)	842-07-9	1	Not on the list of allowed dyes
C.I solvent yellow 56 (CI 11021)	2481-94-9	2	Not on the list of allowed dyes

* Must comply with the demands for purity stated in the directives on food stuffs and dyes

Of the 157 products for which we have information about the product composition, a content of dyes has only been stated for approx. 20 products.

The cosmetics legislation does not state any concentration limits for the allowed dyes as it does for preservatives.

The dyes CI solvent yellow 14 and CI solvent yellow 56 are not found on the list of dyes and are therefore not allowed in cosmetic products.

There is a logical explanation when it comes to the substance CI solvent yellow 14 (CAS no. 842-07-9) which, according to the chemical legislation, is classified as sensitizing (R43), carcinogenic (R40) and mutagenic (R68). The dye CI solvent yellow 56 (CAS no.2481-94-9) is an azoic dye. These azoic compounds are considered dangerous with a risk of long-term effects.

Two of the dyes we have not been able to identify with CAS no. or Colour Index no.

7.2.3 Substances with limitations

Table 7.5 states the substances with limitations that were found in the animal care products. Also stated is the highest allowed concentration in cosmetic products, any limitations and demands for use in cosmetic products as well as mandatory directions and warnings on the label if this is indicated in annex 3 of the Order on cosmetics.

The last column in table 7.5 shows the concentrations in intervals or with less than (<). These are the concentrations provided by the suppliers/producers. Not all substances have information about concentration. Those substances for which the concentration is not known have been indicated with a ?.

Table 7.5 Substances with limitations identified in animal care products.

Chemical name	CAS no.	Number of products	Area of use	Highest concentration allowed as well as limitations and demands	Mandatory directions and warnings on the label	Known concentration limits (%)
Benzalkonium chloride	8001-54-5	6	1) Care agents to be rinsed off after use 2) Other agents	3% In the finished agent, the concentration of benzalkonium chlorid with a C14 carbon chain or shorter may not exceed 0.1%. 0.1%	Avoid any contact with the eyes Avoid any contact with the eyes	0.1-0.2
Benzyl alcohol	100-51-6	5	Solvent, perfume and perfume-like products			?
Boric acid	10043-35-3	6	a) Talc powder	5% (calculated as boric acid) May not be used in products for children under the age of 3.	May not be used in products for children under the age of 3.	<3.0

Chemical name	CAS no.	Number of products	Area of use	Highest concentration allowed as well as limitations and demands	Mandatory directions and warnings on the label	Known concentration limits (%)
			b) Oral care agents c) Other agents	0.1% (calculated as boric acid) May not be used in products for children under the age of 3. May not be used on irritated or damaged skin if the free content of soluble boric acid exceeds 1.5%. 3% (calculated as boric acid) May not be used in products for children under the age of 3. May not be used on irritated and damaged skin if the free content of soluble boric acid exceeds 1.5%.	Avoid swallowing the product. May not be used in products for children under the age of 3. May not be used in products for children under the age of 3. May not be used on irritated or damaged skin.	
Oxyquinoline	148-24-3	1	a) Stabilizing agent of hydrogen peroxide in hair care products that are rinsed off after use b) Stabilizing agent of hydrogen peroxide in hair care products that are not rinsed off after use.	a) 0.3% calculated as base b) 0.03% calculated as base		0.1-0.5
Phenol	108-95-2	1	Soap and shampoo	1% calculated as phenol	Contains phenol	?
Triethanolamine	102-71-6	4	1) Agents that are not rinsed off after use 2) Other products	2.5% May not be used along with nitrosing agents		<1.0
Sodium monofluorophosphate	10163-15-2, 7631-97-2	1	Oral care agents	0.15% calculated as fluorine.	Contains sodium monofluorophosphate	0.1-1.0

None of these substances exceed the highest allowed concentration in cosmetic products.

The substances benzalkoniumchlorid and benzylalcohol are also limited according to both annex 3 and annex 5 because they can have several different functions in cosmetic products.

Regarding triethanolamine, see section 7.2.1 Preservatives on nitrosamine formation.

A content of boric acid has been informed for 6 products. Boric acid may not be used in products for children under the age of 3. In this connection, boric acid has been used in products such as eye and ear cleaning agents for dogs and cats.

7.2.4 UV filters

UV filters are added to the products to either protect the hair/fur against UV radiation or to protect the product itself from decomposition due to UV radiation and to thereby obtain a longer durability. UV filters that have been added to the product to protect the skin must be stated in annex 6 of the Order on cosmetics. UV filters/absorbers that have been added to protect the product from decomposition are not stated in annex 6.

Annex 6 is a positive list of allowed UV filters in cosmetics.

Table 7.6 states the UV filters found in the animal care products. Also stated is the highest allowed concentration in cosmetic products as well as any demands for the text on the label.

Table 7.6 UV filters identified in the animal care products.

Chemical name	CAS no.	No. of products	Highest allowed concentration	Mandatory instruction and warning on label
Benzophenone-3	131-57-7	1	10%	Contains oxybenzon (not necessary when the concentration is 0.5% or below and when the substance is used for protection of the product.)
Octyl Methoxycinnamate	5466-77-3	2	10%	
UV-Blocker	?	2		

Both UV filters are stated in annex 6 of the Order on cosmetics and are therefore allowed as UV filters in cosmetic products. As there is no information available on the concentration of these substances, it cannot be determined whether the demand for the highest allowed concentration has been met.

8 Chemical analyses

During phase 2, a number of specifically selected products will be analysed for ingredients. The criteria for the selection of products for analysis have been established in cooperation with the EPA. The individually selected product does not comply with all the criteria but with one or more of these. The criteria are as follows:

- Among the products to be analysed must be products for both dogs, cats and horses.
- The products must be sold in large amounts, not be niche products.
- The products must be sold retail, not only products that are sold online or at shows.
- Products for which the information received is sparse.
- The products may not have a declaration of contents on the packaging.
- Products with the greatest exposure and frequent use.
- Products expected to contain scents and preservatives.

The EPA is aware of all product names and companies where the samples come from. The product types chosen can be seen from table 8.1.

Table 8.1 Selected products for analysis

Product no.	Product type
1	Dog Shampoo
2	Cat Shampoo
3	Fur care for dogs and cats
4	Horse Shampoo
5	Fur lustre (horse)
6	Fur lustre (horse)

8.1 Analysis methods

8.1.1 X-ray

A subsample of the products is examined through an x-ray technique for content of all metals. The analysis has been carried out by a subsupplier. The analyses have been carried out as single determinations as the analysis uncertainty is <5% RSD. The detection limit is 5 mg/kg.

8.1.2 GC/MS screening (selected preservatives and other extractable organic substances)

A subsample of the product is extracted with dichlormethan with added internal standards through Soxhlet extraction for 16 hours. A subsample of the extract is removed and analysed directly with a combined gaschromatography and mass spectrometry (GC/MS) by scanning over a larger mass area. The content is

calculated quantitatively opposite external standards (selected preservatives) or semi-quantitatively opposite internal standards (other).

The analysis insecurity for components calculated quantitatively (external standard) is 10-15% RSD and for components calculated semi-quantitatively, the analysis insecurity is estimated to be 50-200%.

The analysis have been carried out as true double determinations. The detection limit is approximately 10-50 mg/kg.

8.1.3 Chlormethyl- and methyliso-thiazolones

A representative subsample is extracted and diluted in demineralized water. Two drops of concentrated hydrochloric acid are added to the solution which is then filtered through a 0,45µm filter. The filtered solution is analysed through liquid chromatography with a UV detection (HPLC/DAD). The analyses are carried out as true double determinations. The analysis insecurity is 10-15%. The detection limit is 10 mg/kg.

8.1.4 Scents

A subsample of the product is removed and extracted with water and tert-butylmethylether through shaking, heating, cooling and standing during approximately 16 hours. A subsample of the extract is removed and analysed directly through a combined gas chromatography and mass spectrometry (GC/MS). The analyses are carried out as true double determinations. The detection limit is 1-10 mg/kg and the analysis insecurity is 10-15% RSD.

8.2 Results

8.2.1 X-ray

The x-ray analysis of the animal care products has detected only one metal above the detection limit. Lead was detected in one product. In addition to metals, bromine was detected in three products. The results are stated in table 8.5 as content in the products in the unit mg/kg. The detection limit is 5 mg/kg. The metals not stated in the table have not been detected in the analysis.

Table 8.1 Results of the x-ray analysis. The unit is mg/kg.

Products	D.L	1	2	3	4	5	6
Bromine (Br)	5	23	58	-	79	-	-
Lead (Pb)	5	-	-	-	-	-	18

D.l.: Detection limit

-: Below the detection limit

8.2.2 GC/MS screening including preservatives

The animal care products have been analysed for the preservatives that could be included in the GC/MS screening by including external standard. The result of the analyses are stated in table 8.2. The two results state the double determinations. The unit is mg/kg.

Table 8.2 Results of analysis for preservatives. The results are stated in mg/kg.

Products	D.L.	1	2	3	4	5	6
Methylparaben	50	-	-	870 990	-	-	-
Ethylparaben	20	-	-	160 180	-	-	-
Propylparaben	20	-	-	90 77	-	-	-
Butylparaben	10	-	-	200 210	-	-	-
Benzylbenzoat	2	-	13 13	-	-	-	-
Benzylalkohol	1	98* 59*	250 260	-	-	-	-
o-cresol	1	-	-	-	-	-	-
m+p cresol	1	-	-	-	-	-	-

D.L.: Detection limit

*: Influenced by other top, thus greater insecurity about the quantitative determination

-: No detection about the detection limit

The result of the GC/MS screening for extractable organic substances is stated in table 8.3. The analysis has been carried out in double determination and both results are given in the table.

All substance identification has been carried out from the mass spectre by comparison to mass spectres in a data library (NIST). In each case, spectres that represent the best match have been evaluated by "scientific judgement".

The components that could be identified are stated with chemical name in the table. The components that could not be identified to a specific chemical component are combined in groups according to their structure and the components for which an identification was not possible at all have been combined into one group under unidentified components.

Table 8.3 Results of the GC/MS screening. The two results state the double determinations. The results are stated in mg/kg. Extractable organic substances.

Products	1	2	3	4	5	6
1,4-dioxan	49 56	200 220	-	74 61	-	-
Propylen glycol*	-	51 46	1600 1900	-	-	-
2-(2-ethoxyethoxy)-ethanol	-	-	-	90 89	-	-
2-Butanon	-	-	-	-	22 26	-
2-Butanol	-	-	-	-	20 16	-
Eucaluptol	150 170	-	-	-	-	-
Pentolactone	-	-	260 320	-	-	-
2,4-dimethyl hexan	-	-	-	-	4 4	-
Phenylethyl alkohol	-	-	-	7 7	-	-
Acetic acid, phenylmethyl ester	-	-	-	7 7	-	-
2,6-dimethyl, 7-octen-2-ol	85 97	-	-	-	-	-
3,7-dimethyl, 1,6-octadien-3-ol,	250 260	41 45	-	-	-	-
Methyl salicylat	-	-	-	-	-	8200 8600
2-phenoxy ethanol	-	370 400	2700 3300	620 590	-	-

Products	1	2	3	4	5	6
Bornyl acetat	-	-	-	130 130	-	-
Camphor	46 49	-	-	-	-	-
1-tetradecen	-	130 130	-	94 140	-	-
2-hydroxy-benzoesyre, 1-methylethyl ester	-	-	-	-	-	130 130
Dimethyl phthalat	-	-	-	-	-	160 160
Octane acid	120 170	-	-	-	-	-
Diethyltoluamid	-	-	-	-	-	170 170
Diethylphthalat	-	-	-	-	-	160 170
Dibutylphthalat	-	-	-	-	-	120 130
1-Dodecen	140 130	-	-	-	-	-
N,N-dimethyl, 1-dodecanamin	-	-	120 140	-	-	-
Alken or cyclic alkan (2 isomere)	-	-	110000 140000	-	-	-
Caryophyllen	280 300	-	-	-	-	-
Alkylamin	-	-	10000 12000	-	-	-
1-Chloro dodecane,	1800 2000	-	-	5000 5200	14 4	-
Ethyl 9-hexadecenoat	-	-	300 340	-	-	-
Vinyl lauryl ether	86 76	240 210	-	110 180	-	-
1-Bromoalkan (possibly decan)	-	20 19	-	-	-	-
Hexadecansyre, ethyl ester	-	-	430 460	-	-	-
Diethylhexylphthalat (DEHP)	430 450	-	-	-	-	-
Methyl dihydrojasmonat	-	87 85	-	-	-	-
1-chlorotetradecan	-	1000 990	-	1100 1400	-	-
2-(dodecyloxy)-ethanol (isomeric compounds)	-	2800 3100	-	2300 1700	-	-
Heptanal, 2-(phenylmethylene)	27 27	-	-	-	-	-
1,3,4,6,7,8-Hexahydro-4,6,6,7,8,9-hexamethyl-cyclopenta[g]-2-benzopyran	-	64 61	-	-	-	-
5-Octadecen	-	-	2200 2300	-	-	-
9,12-Octadecadiensyre, ethyl ester	-	-	430 450	-	-	-
Alken	-	1000 1100	-	-	-	-
n-hexyl salicylat	19 17	-	-	-	-	-
Isopropyl myristat	89 93	-	-	-	-	-
Dodecanamid, N,N-bis(2-hydroxyethyl)	190 250	-	-	-	-	-
Thiazol (isomer)	-	-	-	270 220	-	-

Products	1	2	3	4	5	6
Octadecan acid, ethyl ester	-	-	67 51	-	-	-
Sum of grouped compounds:						
Ethoxy/oxy compounds	1600 2000	9300 10000	-	17000 17000	-	-
Thiazoler (isomeric compounds)	-	6800 6400	-	-	-	-
Ethyl oleat (2 isomeric compounds)	-	-	1000 1100	-	-	-
4-tert-butylcyclohexyl acetat (isomeric compounds)	230 240	-	-	-	-	-
Alkyl amines	-	5600 5100	440 580	-	-	-
Alkan, alken, cyclo or alcohol compounds	3000 4100	-	-	-	-	-
Esters and ethers	-	-	9900 8500	-	-	-
Cycloalkanes	-	9000 9000	4200 4500	760 450	-	-
Dodecenes	-	390 350	-	410 420	-	-
Alcohols	-	5500 5800	-	-	-	-
1-chloro-alkanes (approx. C10-C15)	1100 1300	-	-	-	-	-
Phthalates (in addition to named)	96 75	68 63	-	-	-	-
Chloric and bromine alkanes	-	-	-	170 210	-	-
Unidentified	920 1200	9200 9600	-	-	-	-

*: Identified as the most likely component

-: Below the detection limit

The ethoxy/oxy compounds in samples 1, 2 and 4 cannot be identified further but they might be a mixture of surfactants which cannot be chromatographed to a certain identification and quantification through GC/MS.

8.2.3 Chlormethyl- and methyliso-thiazolones

For one product, an analysis was carried out for a sum of the components chlormethylisothiazolon and methylisothiazolon. As stated in table 8.4, the components could not be detected in the product.

Table 8.4. Results of the analysis for chlormethyl- and methylisothiazolones. The unit is mg/kg.

Products	D.L	1
Chlormethylisothiazolon and methylisothiazolon	10	-

8.2.4 Scents

The analysis of the 26 specific scents in the animal care products detected a total of 15 scents distributed on 4 products. In two of the products, it was not possible to detect a content of the selected scents above the detection limit. The total content of all 26 scents is stated at the bottom of table 8.4. The total content varies from 6 mg/kg to 650 mg/kg, corresponding to 0.065%.

Table 8.5 Results of the x-ray analysis. The unit is mg/kg. The two results state the double determinations. Scents.

Products	D.L.	1	2	3	4	5	6
Anisyl alcohol	1	-	-	-	-	-	-
Amyl cinnamal	1	100 110	-	-	-	-	-
Amylcinnamyl alcohol	1	-	-	-	-	-	-
Benzyl alcohol	1	24 26	160 160	-	-	-	-
Benzyl benzoat	1	9 17	13 18	-	-	-	-
Benzylcinnamat	1	-	-	-	-	-	-
Benzyl salicylat	1	5 5	3 3	-	-	-	-
α -Cetone (gamma-Methylionone)	1	-	17 16	-	-	-	-
Cinnamyl alcohol	1	-	-	-	-	-	-
Cinnamal	1	-	-	-	-	-	2 2
Citral	1	-	5 5	-	-	-	-
Citronellol	-	49 63	-	-	-	-	-
Coumarin	1	58 59	4 4	-	10 7	-	-
Eugenol	1	-	-	-	-	-	-
Farnesol	1	-	-	-	-	-	-
Geraniol	1	4 3	9 9	-	-	-	-
Hexylcinnamaldehyde	1	5 5	-	-	4 4	-	-
Hydroxycitronellal	1	-	6 7	-	-	-	-
Lillial	1	7 7	7 7	-	2 2	-	-
D-limonen	1	10 9	25 26	-	300 320	-	-
Linalool	1	370 360	51 58	-	5 5	-	4 4
Lylal	1	-	-	-	-	-	-
Isoeugenol	1	-	-	-	-	-	-
Methyl heptin carbonat	1	-	-	-	-	-	-
Oakmoss	10	-	-	-	-	-	-
Treemoss	10	-	-	-	-	-	-
Sum		640 660	300 310	-	320 340	-	6 6

D.g.: Detection limit

-: Below the detection limit

8.3 Comments on the test results

The GC/MS scening for preservatives yields only 3 types of preservatives: parabenes, benzylbenzoat and benzylalcohol.

In addition, only 3 of the 6 products examined contain preservatives. The concentration of preservatives has been shown to be very low. It should be noted that a few other preservatives have been identified in the analyses for organic substances (e.g. 2-phenoxyethanol). See comments for each product.

According to table 8.3, many chemical organic substances have been identified in the 6 products examined. We have chosen not to comment on substances that have a concentration below 0.05% with the exception of substances such as 2-phenoxy

ethanol, phthalates, 1,4-dioxan, perfume, bromine and lead. However, the perfume substances are interesting in a low concentration due to the new regulations for cosmetic products where 26 perfume substances must be declared when they are found in concentrations >10 ppm for leave-on and 100 ppm for rinse-off products.

We have also chosen not to comment on the grouped compounds in every case. There is, for example, no comments to substance groups such as alcohols, esters and ethers as many of the remaining chemical compounds will be covered by these substance groups.

2 of the products contain phthalates in a low concentration. Phthalates are used in cosmetic products for different purposes as solvents or as perfume fixation. Phthalates can be found on the EPA list of unwanted substances.

A few of the products contain short chained chlorine parafins which are alkanes, C10-13-,chlor- (CAS no. 85535-84-8). These can be found on the list of hazardous substances⁷ and are classified as Carc3; R40 (Limited evidence of a carcinogenic effect). New regulations on carcinogenic substances in cosmetics are expected to be implemented in 2004. Products classified with Carc3 (R40) will then have to go through an approval procedure before permission for marketing is granted.

The scents for which analyses have been carried out are all found on the EPA list of unwanted substances. These substances are regarded as sensitizing, see chapter 8 on scents. The analyses for scents show that perfume is very complex mixtures of many different scents. According to the coming cosmetics legislation, which will be implemented in 2004, the 26 scents for which analyses have been carried out will have to be declared on the INCI declaration depending on concentration. See chapter 9.

Product no. 1

The product has been chosen due to a lack of declaration on the packaging, no product information and because the product is sold retail.

Table 8.6 most important substances identified through analyses in product no. 1

Function	CAS no.	Substance name	Content % ^α
Preservation	100-51-6	benzylalcohol	0.0079
Surfactants	-	Ethoxy/oxy compounds	0.18
Perfume	470-82-6	Eucaluptol	0.016
	122-40-7	Amyl cinnamal	0.0105
	120-51-4	Benzyl benzoat	0.0013
	106-22-9	Citronellol	0.0056
	91-64-5	Coumarin	0.0059
	78-70-6	Linalool	0.035
	-	a.o. in very low conc. < 0.0010%	
Perfume	-	total	0.065
Other substances	112-52-7	1-chloro-dodecane	0.19
	-	1-chloro-alkaner	0.12
	117-81-7	Diethylhexylphthalat	0.044
	7726-95-6	Bromine (Br)	0.0023

^α Average of double determination

The preservative identified is benzylalcohol but in this case that may also be a scent. This product has, as the only one, been analysed further for a content of the preservatives methylchloroisoithiozolinon and methylisoithiozolinon (Kathon), see table 8.4. The analysis shows that the product does not contain these preservatives. The highest concentrations are ethoxy/oxy compounds found in the product. These are probably nonionic or anionic surfactants that are ethoxylated i.e. contain ethylenoxides. The product contains chlorinated paraffins. In addition, the product

contains a low concentration of 1,4-dioxan, which is not allowed in cosmetics. The product contains many of the scents considered to be sensitizing, but in very varied and small amounts. The product also contains another scent that has been identified under organic compounds, eucalyptol.

Product no. 2

The product has been chosen because of retail sale, great exposure as well as a its significant market spread.

Table 8.7 most important substances identified through analyses in product no. 2.

Function	CAS no.	Substance name	Content % ^α
Preservation	100-51-4	Benzylalcohol	0.0255
	120-51-4	Benzylbenzoat	0.0013
	122-99-6	2-phenoxyethanol	0.0385
Surfactants	-	Ethoxy/oxy compounds	0.97
	4536-30-5	Laureth-1	0.30
Perfume	127-42-4	a-Cetone	0.0017
	5989-27-5	D-limonen	0.0026
	78-70-6	Linalool	0.0055
	-	a.o. in very low conc. < 0,0010%	
Perfume	-	Total	0.031
Other substances	-	Thiazoles	0.66
	2425-54-9	1-chlorotetradecan	0.10
	-	Alkyl amines	0.53
	7726-95-6	Bromine (Br)	0.0058

^α Average of double determination

Benzylalcohol and benzylbenzoat have been identified as preservatives. The substances measured in the highest concentrations are sums of grouped compounds and not individual substances. One of the grouped compounds is thiazoles. It is a very complex substance group where the heterocyclic 5-chained ring is the base structure. It is not possible to concretise further which thiazoles are found in the product. Kathon can be excluded in this connection as these isothiazolinones have a different chemical structure. However, based on the content of bromine in the product, it is possible to guess a bromine-thiazol compound. In the ingredients list on the product Kathon is however declared. It is allowed to use up to 0,0015% Kathon as a preservative in cosmetic products. Which is far below the contents of thiazoler found in the analysis. 2- phenoxyethanol has probably been added as a preservative along with another unidentified preservative. Benzylalcohol acts as both preservative and scent. The product also contains a low concentration of the substance 1,4-dioxan, which is not allowed in cosmetic products.

Product no. 3

The product has been chosen due to a lack of composition information, no declaration of contents on the packaging as well as its significant market spread.

Table 8.8 most important substances identified through analyses of product no. 3.

Function	CAS no.	Substance name	Content % ^α
Preservation	99-76-3	Methylparaben	0.093
	120-47-8	Ethylparaben	0.017
	94-13-3	Propylparaben	0.008
	94-26-8	Butylparaben	0.021
	122-99-6	2-phenoxyethanol	0.30
Solvent	57-55-6	Propylenglycol	0.18
	-	Alken or cyclic alkan (2 isomeric)	12.5
Perfume	-	-	-
Other	-	Alkylamin	1.10
	111-62-6	Ethyl oleat	0.11

☒ Average of double determination

Parabenes have been identified as preservatives in the product. The product also contains a fairly high concentration of 2-phenoxy ethanol, which is often added as preservative along with parabenes. The product contains the highest identified concentration of a substance group, "alken or cyklic alkan". It is assumed to be C14-16. This may mean a content of lanolin/wax. This argument can be made, as the product also smells of lanolin.

The solvent propylenglycol has been identified. The concentration of alkylamin is also fairly high in the product. In addition, smaller amounts of ethyl oleat have been measured in the product, which is used as softener in cosmetics.

No scents have been detected in this product.

Product no. 4

The product has been chosen because it is used for horses, is sold retail and has a fairly wide market spread and limited declaration.

Table 8.9 most important substances identified through analyses of product no. 4.

Function	CAS no.	Substance name	Content % ☒
Preservation	122-99-6	2-phenoxyethanol	0.061
Surfactants	-	Ethoxy/oxy compounds	1.7
		Laureth-1	0.20
Perfume	5989-27-5	D-limonen	0.031
	-	etc. in very low conc. < 0,0010%	
Perfume	-	Total	0.033
Other	112-52-7	1-chloro dodecane	0.51
	2425-54-9	1-chlorotetradecan	0.13
	7726-93-6	Bromine (Br)	0.0079

☒ Average of double determination

The product contains a smaller concentration of the preservative 2-phenoxyethanol. 2-phenoxyethanol is often used along with another preservative, methyldibromoglutaronitrile. As the product also contains both bromine and bromalkanes, this might indicate a content of this preservative. The product also contains a low concentration of the substance 1,4-dioxan which is stated in annex 2 of the Order on cosmetics, i.e. is not allowed in cosmetics.

The concentration of ethoxy/oxy compounds (surfactants) has been measured to be 1.7 % in this product. These are probably nonionic or anionic surfactants that are ethoxylated i.e. contain ethylenoxides. The product contains chlorinated paraffins, which are the chlorine compounds, 1-chlorododecan and 1-chlorotetradecan. D-limonen comprises approximately the entire scent share.

Product no. 5

The product has been selected because it is sold retail, has an insufficient declaration of contents on the packaging and a significant market spread.

In this product, it has not been possible to detect anything significant, neither preservatives, organic compounds nor scents. The sample smells of spirits, possibly windshield wash. Spirits (ethanol) has not been detected in the analyses as ethanol is volatile and the analyses used are not been able to catch it. However, this does not have to mean that it is not present. The smell of spirits may also be explained by the scent limit for ethanol being approximately 100 ppm and ethanol may therefore be present but in a low concentration, possibly below the detection limit. Butanol/butanon has been found in the product in a very low concentration.

Butanol/butanon has a glue/acetone-like smell and this scent cannot be identified through a subjective scent evaluation even though the scent limit is somewhat lower than for ethanol.

Product no. 6

The product has been selected because of a lack of composition information, no declaration of contents on the packaging and because it is a product for horses.

Table 8.10 most important substances identified through analyses of product no. 6.

Function	CAS no.	Substance name	Content %
Flavour	119-36-8	Methyl salicylat	0.84
Perfume	104-55-2	Cinnamal	0.0002
	78-70-6	Linalool	0.0004
	-	Total	0.0006
Other	-	Phthalates total	0.045
	-	Lead	0.0018

α Average of double determination

It is very limited what has been found in this product. Methyl salicylat (also known as wintergreen oil) has been detected. This compound is used as flavour in cosmetic products and often in massage oils and similar products. The substance also has a sweet, phenol-like scent. The product contains a small amount of phthalates. The content of scents in the product has only been detected at 6 ppm. However, the concentration is higher if you count methylsalicylate as a scent. 18 ppm lead was detected in the x-ray analysis of this product. It is unknown where it comes from, but it may be an impurity.

Product no. 7

The product has been selected because it is sold retail, is special marketed as a dandruff shampoo and has a significant market spread.

Table 8.11. most important substances identified through analyses of product no. 7

Function	CAS no	Substance name	Content % α
Preservation	100-51-4	Benzylalcohol	0,0004
	120-51-4	Benzylbenzoat	0,0012
Surfactants	-	Ethoxy/oxysubstance sr	0,14
Perfume	122-40-7	Amylcinnamal	0,0033
	106-22-9	Citronello	0,0053
	91-64-5	Coumarin	0,0022
	101-86-0	Hexylcinnamaldehyd	0,0045
	107-75-5	Hydroxycitronellal	0,0023
	78-70-6	Linalool	0,0098
			α-Isomethylionon
	-	etc. in very low conc. < 0,0010%	
Perfume	-	Total	0.034
Other	-	Chloro dodecane	0,25
		Alkyloxy-alcohol isomere	0,58
	7726-95-6	Bromine (Br)	0,0068
	7440-24-6	Strontium	0,0006

α Average of double determination

Benzylalcohol and benzylbenzoat have been identified as preservatives. Benzylalcohol can function both as a preservative and as a perfume. Analyses do not show content of 2-phenoxyethanol even though this is declared on the label. The content of bromine may come from the declared content of methyldibromoglutaronitrile. The substances that are found in highest concentration are sums of a substance group, including alcohols. These might be used as solvents.

The concentration of ethoxy/oxy substances (surfactants) is analysed to 0,14 % in this product. These are probably nonionic or anionic surfactants that are ethoxylated i.e. contain ethylenoxides. The product also contains short length chlorinated paraffins (0,25%), chlorododecane, which are health and environmental problematic substances.

Product no. 8

The product was chosen because it only has a Swedish label and a non-specific declaration.

Table 8.12. most important substances identified through analyses of product no. 8

Function	CAS no.	Substance name	Content % α
Preservation	122-99-6	2-phenoxyethanol	0,085
	100-51-4	Benzylalcohol	0,0015
	120-51-4	Benzylbenzoat	0,0001
	57-09-0	Cetrimonium bromide	0,615
Surfactants	-		
Perfume	-	etc. in very low conc. < 0,0010%	0,003
Others	81-13-0	Dexpantheol (B5 vitamin)	0,14
		Alkylamin	0,17
		Cyclohexadecan	0,91
		Cyclooctadecan	0,45
		Pantolacton	0,073
		1,1-oxybis-2-propanol (isomere förbindelser)	0,925
		7726-95-6	Bromine

α Average of double determination

The product contains four different preservatives with Cetrimoniumbromide in highest content. Cetrimoniumbromide is allowed in cosmetic products as preservative but only in concentration up to 0,1 %. The substance can be used for other purposes though in higher concentrations.

Panthenol are often used as an antistatic substance or as a conditioner. The product contains about 1-2 % alkanes and a smaller amount of Pantolacton, that is an alcohol that might be used as a solvent.

There's not detected any surfactants but since the product is a conditioner and not a shampoo this was expected.

Product no. 9

The product was chosen because of the producer's marketshare, the marketing for furs in special colours and no information on ingredients.

Table 8.13. most important substances identified through analyses of product no. 9

Function	CAS no.	Substance name	Content % α
Preservation	122-99-6	2-phenoxyethanol	0,053
	100-51-4	Benzylalcohol	0,028
		Methylparaben	0,006
		Ethylparaben	0,0026
Surfactant	-	Ethoxy/oxy substances	0,165
Perfume	-	Few in very low conc. < 0,0010%	0,026
Other		Dodecanamid- isomers	0,12

Function	CAS no.	Substance name	Content % α
		Chlorododecane	0,18
		Chlorotetradecane	0,049
	7440-24-6	Strontium	0,0005
	7726-95-6	Bromine	0,005

α Average of double determination

The product contains four different preservatives with highest content of 2-phenoxyethanol. 2-phenoxyethanol is often used at the same time as another preservative like for instance methylidibromoglutaronitrile. As the product contains small amounts of bromine this might indicate an amount of this preservative as well.

The concentrations of ethoxy/oxy substances (surfactants) are analysed to the amount of 0,17 % in this product. These are probably nonionic or anionic surfactants that are ethoxylated i.e. contain ethylenoxides. The product also contains chlorinated paraffins, like chlorododecane and chlorotetradecane.

There's only found very small amounts of perfume substances besides benzylalcohol that can function both as preservative and perfume.

Product no. 10

The product was chosen due to lack of declaration.

Table 8.14. Most important substances identified through analyses of product no. 10

Function	CAS no.	Substance name	Content % α
Surfactants	-	Ethoxy/oxy substances	0,46
Solvents		Alkyloxy-alcohol isomers	0,64
Perfume	-	Few in very low conc. < 0,0010%	0,007
Other		Dodecanamid-isomers	0,32
		Chlorododecane	0,39
		Chlorotetradecane	0,12
		1,4-dioxan	0,012
	7439-92-1	Lead	0,0007

α Average of double determination

No preservatives were detected. The product contains a low amount of 1,4-dioxan, which is stated in annex 2 of the Order on cosmetics, i.e. is not allowed in cosmetics. 7 ppm lead was detected in the x-ray analysis of this product. It is unknown where it comes from, but it may be an impurity since the concentration is that low.

The concentrations of ethoxy/oxy substances (surfactants) are analysed to be 0,46 % in the product and there is an amount of alcohol-isomers at 0,64 %. As the product is a shampoo it was expected to find surfactants, these are probably nonionic or anionic surfactants that are ethoxylated i.e. contain ethylenoxides. and the alcohols might serve as solvents. The product also contains larger amounts of chlorinated paraffins (0,51%), like chlorododecan and chlorotetradecan. These are problematic to the health and the environment.

The content of perfume is found to be very low. Even though the product contains some kind of citrus oil it is not found to contain more than about 6-7 ppm of D-limonen.

Product no. 11

The product was chosen due to the fact that there is no declaration on the product and the marketing of special effects for the fur.

Table 8.15. most important substances identified through analyses of product no. 11

Function	CAS no.	Substance name	Content % α
Preservation	122-99-6	2-phenoxyethanol	0,0043
	100-51-4	Benzylalcohol	0,0295
Surfactant	-	Ethoxy/oxy forbindelser	0,300
Perfume	-	Few in very low conc. < 0,0010%	0,052
Other		Dodecanamid-isomere	0,260
		Alkylamines and alylamides	0,08
		Different alcohol/alkyloxy, alkanes substances	2,04

α Average of double determination

The product contains two preservatives 2-phenoxyethanol and benzylalcohol.

The concentration of ethoxy/oxy substances (surfactants) is 0,3 % in the product. The product is a shampoo so it was expected to contain surfactants. These are probably nonionic or anionic surfactants that are ethoxylated i.e. contain ethylenoxides.

Besides benzylalkohol, which can also be used as a perfume there is only found very low concentrations of perfume.

The product also contains larger amounts of alcohol-substances that most likely are used as solvents.

Product no. 12

The product was chosen because of no Danish labelling and a non-specific declaration.

Table 8.16. most important substances identified through analyses of product no. 12.

Function	CAS no	Substance name	Content % α
Surfactant	-	Ethoxy/oxy substances	0,02
Perfume	106-22-9	Citronellol	0,023
	106-86-0	Geraniol	0,036
	-	a.o. in very low conc. < 0,010%	
Perfume	-	Total	0,065
Other	7439-92-1	Lead	0,0006
	7440-24-6	Strontium	0,0006

α Average of double determination

No preservatives are found and only very low concentrations of perfume are identified in the product even though it is declared on the product that it contains perfume and preservative. Both must be substances that cannot be identified with the used analytical methods. In the same the product is declared to contain a kiselemulsion and acryllic emulsion, which do not show up in the analyses.

Likewise is the concentration of ethoxy/oxy substances (surfactant) found to be very low in the product. The function of the product are however not cleaning but more in a protective way so this adds up with no surfactants. Lead and strontium

are found but the amounts are so little that it most likely are impurities in the product.

8.4 Conclusion

Regarding the chemical legislation, the analyses show that none of the products contain substances in a concentration that would lead to demands for classification and labelling of the products. Short chain length (C10-13) chlorinated paraffins have been found in several products. They are partly regulated and are forbidden to use in certain product categories. The substances are classified as Carc. 3; R40 R50/53.

Regarding the cosmetics legislation, the analyses have not identified substances that are not allowed in cosmetic products. The preservatives identified have been found in concentrations below the highest allowed concentrations that are allowed in cosmetic products.

9 Scents

We have chosen to describe the scents in a separate chapter, partly because perfume substances are not specifically regulated in their own annex to the cosmetics legislation and partly because scents may be the most frequent cause of allergy besides preservatives.

The function of scents in the products is partly to provide a sensation of well-being and partly to mask any other unpleasantly smelling ingredients in the product.

There is a lot of focus on scents and their sensitizing potentiation. Perfume allergy is an increasingly big consumer problem and a regulation within this substance group is underway. At the moment, scents in cosmetics do not have to be declared. It is sufficient to state the substance group "perfume". In the coming amendment to the Cosmetics Directive, which is expected to be implemented in the Danish legislation in 2004, a number of likely sensitizing perfume substances must be stated on the INCI declaration if the content is > 0.001% for "leave on products" and 0.01% for "rinse-off products". This information will improve the diagnosis of contact allergy in the consumers who are perfume sensitive and make it possible for them to avoid the use of the cosmetic products and chemical substances containing these substances.

Perfume may either be individual low-molecular synthetic substances or natural plant oils and extracts. Both types of scents, the synthetic and the natural, may cause allergic reactions. Perfumes as commodities are often a complex mixture of various scents including many of the substances stated in table 9.1.

EU's Scientific Committee on Cosmetic Products and non-food Products (SCCNFP) has prepared a list of 24 scents considered to be potential skin allergens. These are the 24 scents for which analyses have been carried out for the animal care products, see chapter 7.

The 24 perfume substances can be seen in table 9.1.

Table 9.1 Perfume substances considered to be potential skin allergens.

Chemical name	CAS no.
Amylcinnamaldehyde	122-40-7
Amylcinnamyl alcohol	101-85-9
Benzyl alcohol	100-51-6
Benzylsalicylat	118-58-1
Cinnamylalkohol	104-54-1
Cinnamal	104-55-2
Citral	5390-40-5
Coumarin	91-64-5
Eugenol	97-53-0
Geraniol	106-24-1
Hydroxycitronellal	107-75-5
Lyral	31906-04-4
Isoeugenol	97-54-1
Anisyl alcohol	105-13-5
Benzylalcohol	120-51-4
Benzylcinnamat	103-41-3
citronellol	106-22-9
d-limonen	5989-27-5
Farnesol	4602-84-0

Chemical name	CAS no.
Hexyl cinnamaldehyde	103-41-3
Lilial	80-54-6
d-Limonene	5989-27-5
Linalool	78-70-6
Methyl heptine carbonate	111-12-6
γ-Methylionone	1127-51-5

Four of the 24 perfume substances are classified and found on the list of hazardous substances.

Chemical name	CAS no.	Classification
Benzylalcohol		Xn; R20/22
Citral		Xi; R38 R43
d-limonen		R 10 Xi; R38 R43
Benzylbenzoat		Xn; R22

Table 8.2 lists the scents mapped through the procuring of composition information from suppliers etc. or through information on the product label/packaging. The scents found through analysis of selected products are listed in table 7.4 of chapter 7.

Many of the substances in table 9.2 are natural plant oils and extracts.

Table 9.2 Scents identified during the mapping.

Chemical name	CAS no.	No. of products
Almond oil	-	2
Bay oil	8006-78-8	1
Benzyl alcohol	100-51-6	5
Calendula officinalis oil	70892-20-5	3
Camomile oil	8015-92-7	3
Camphor	76-22-2	
Citronella oil	8000-29-1	6
Clove oil	8000-34-8	2
Eucalyptus globulus oil	8000-48-4	3
Juniperus communis oil	73049-62-4	1
Laurel oil (laurus nobilis)	8002-41-3	1
Lavender oil (Lavender angustifolia)	8000-28-0	3
Lemon oil	8008-56-8	1
Menthol	2216-51-1	8
Pennyroyal oil (menthe pulegium)	8007-44-1	1
Peppermint oil (Mentha piperita)	8006-90-4	3
Rosemary oil (Rosmarinus officinalis) and extract	8000-25-7	20
Sage oil (salvia officinalis)	8022-56-7, 84776-73-8	1
Thymol	89-83-8	1

Plant oils and extracts may contain many different active substances that may be sensitizing. Several of the 24 previously mentioned scents are often present in plant extracts and oils.

Some of these natural plant oils and extracts may also have health hazardous qualities. During the special efforts of "Mapping of chemical substances in consumer products", a large number of selected plant substances in "natural" cosmetic products have been evaluated. Of these, 3 oils/extracts have been observed in this mapping of ingredients in animal care products.

These are *Prunus dulcis* (almond oil), *calendula officinalis* (marigold oil) and *camomilla recutita* (camomile). The sensitizing effect has been evaluated for the

plant extract/oil as a whole and not for all ingredients in the individual extract/oil. These are not necessarily known. In the mapping project “Selected plant substances in “natural” cosmetic products”, camomile has been evaluated as potentially sensitizing, marigold oil has been evaluated as potentially sensitizing and it has not been possible to evaluate almond oil.

10 Literature

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