Poison in Furs

Report II - 2011
Questionable Chemicals in Fur Products

Report and Investigation Programme from
EcoAid by Manfred Krautter
on behalf of FOUR PAWS – Animal Welfare Foundation

Translation of the German Report "Gift im Pelz II" by FOUR PAWS

With a preface from
Thomas Pietsch, wild animal expert at FOUR PAWS
and a foreword from

Dr. Hermann Kruse, Institute for Toxicology and Pharmacology at the University of Kiel

Hamburg and Wiesbaden, 5. Dezember 2011

This is a translation from the original German report "Gift im Pelz, Report II". The translation was carried out by FOUR PAWS . Except for the text of the summary, this translation was not checked by the author and EcoAid can not guarantee for absolute accuracy of the translation.

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EcoAid by Manfred Krautter advises and supports companies and organisations as an independent consultancy for the protection of natural resources, in the protection of human rights, the observance of suitable occupational health and safety and social standards and for consumer protection. EcoAid identifies risks through potentially dangerous products or production conditions and helps to correct them. Its work focuses on:

- Product safety, risk, issue and crisis management
- Corporate and Social Responsibility (CSR) & product innovations
- Sustainability communication & campaigning for sustainability.

Manfred Krautter, the author of this report, is the founder and leader of EcoAid. The long-time Greenpeace campaign director has extensive experience in environmental and consumer protection. Thechemical engineering graduate is the author of numerous publications and was awarded the "Almeria Prize". He works as an independent consultant with a highly qualified network of experts from various fields.
www.ecoaid.de

1 Preface and Foreword

1.1 Publisher's Preface from FOUR PAWS

Why a new edition of "Poison in Furs"?

The sad fate of fur-bearing animals such as minks or foxes, which are kept under very bad conditions by the fur industry, still has not changed in 2011. The question of what dangers the consumer is exposed to when wearing furs was investigated for the first time in Germany in 2010 - with alarming results. While industry and retail trade were claiming that fur was a particularly sustainable natural product, the first poison report from FOUR PAWS and EcoAid painted a completely different and more realistic picture: fur fashion is heavily contaminated with hazardous and harmful chemicals. The new edition of our study now shows that the fur industry and the trade have done nothing to reduce the risk for consumers and employees a year later. Extending the study to the European region with furs from Switzerland, Austria, the Netherlands, Great Britain, Bulgaria and Romania resulted in findings that the contamination was worryingly consistent. The results make it clear that in addition to the species-inappropriate fur farming attached to fur products, there are other very good reasons to resort to alternative materials: the protection of the public health and environmental protection.

As an international animal protection organisation, FOUR PAWS have been fighting for the rights of animals for over 20 years - whether for economic, scientific or other purposes, both bought and abused. A guiding principle of our work is the respect for all living beings and the belief that every living being has the right to be treated respectfully and to lead a dignified existence that meets their needs. The protection of animals, humans and the environment are interconnected. This is why FOUR PAWS do not only deal with animal welfare-related problems, but also with the associated risks to the affected consumers. A key requirement for sustainable improvements in animal welfare and consumer protection is changing consumer behaviours.

This report is dedicated to focusing on consumer protection and the toxic chemicals that are used in fur production and which contaminate the end consumers. Therefore, a little space is given to animal protection in this preface.

The acceptance of keeping animals for their fur

The use of animals for their fur is vehemently opposed by animal welfare organisations. This can be ascribed to the torturous conditions at fur farms in which wild animals such as minks, foxes or raccoon dogs are forced to spend their lives trapped in tiny wire cages where they have no chance of ever coming close to living out their natural behaviours.

In addition, from an animal welfare point of view, there is no justification for torturing and then killing animals for the production of unnecessary and easily replaceable fashion and luxury goods. The German Animal Protection Act states in § 1 that *no one may cause pain*,

suffering or injury to an animal, without a valid reason. The law does not always accurately define what a valid reason is. The sale of fashion goods and accessories, for which there are plenty of alternatives, cannot be considered a valid reason. The Committee on Animal Welfare of the Federal Veterinary Association determined in 2000: *The committee rejects the keeping of animals for the purpose of fur production.(...) The keeping of fur-bearing animals in cages is generally rejected on ground of animal protection. The killing of animals solely for their fur is not a valid reason in the opinion of the Committee within the sense of the Animal Protection Act.* Likewise, churches [1] and scientists from different disciplines [2] reject the rearing and killing of fur-bearing animals for fashion purposes on ethical grounds.

Surveys show that people in Europe generally have a very critical stance towards the keeping of animals for their fur[3]. 72% of Europeans rate the animal welfare standards with regard to fur-bearing animals as being very poor or poor and 71% are convinced that it is necessary to work harder towards improving animal welfare for fur-bearing animals. In Germany, the Netherlands and Britain, polls show clear majorities for fur farm bans.

And indeed, countries like Austria and England have completely banned fur farms and in the Netherlands, farms for foxes and chinchillas are also banned. In Switzerland and Sweden (only for foxes) keeping requirements have been adopted that make it practically impossible to operate fur farms economically, so that today such farms no longer exist. This development is also expected in Germany, where the approximately 20 remaining mink farms have to implement better keeping conditions in stages until 2016 (e.g. more land, some natural soil, rock climbing and swimming possibilities, etc.).

At the EU level, after years of campaigning by animal welfare organizations, import and trade bans have been adopted for products (mainly furs) from seals, dogs and cats.

Little acceptance of fur fashion

Fur fashion is critically judged in representative surveys. A representative survey[4] conducted in Germany in 2007 resulted in 83 percent of women and 85 percent of men have hesitated to buy clothes made of real fur or fur trim. Only 8 percent of women and 4 percent of men wear clothes made of real fur or trimmed with fur. According to a survey[5] conducted in Great Britain in February 2007, 93 percent of the people reject the idea of wearing fur and a similar result was obtained in the Netherlands in February 1999[6]: 93 percent of the respondents said that nobody in their family wore fur.

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[1] in this sense, the opinion of both the Evangelical Church of Germany as well as the Commissioner of the German Bishops (1986)

[2] The Ethical Case Against Fur Farming. A statement by an international group of academics, including ethicists, philosophers and theologians. (2005)

[3] http://ec.europa.eu/food/animal/welfare/sum_response_stats_en.pdf / Response statistics for Community Action Plan on Animal Welfare and Protection: Welfare and protection of farmed animals, 2005-12-20, 44.491 participants

[4] Survey by the Society for Consumer Research, October 2007 of 5044 women and men for the magazine TextilWirtschaft

[5] Survey Phonebus of 2037 women and men in January/February 2007 for RSPCA

[6] Survey Intomart of 500 men and women in February 1999 for Bont voor Dieren

Some internationally known designers such as Tommy Hilfiger, Calvin Klein and Stella McCartney renounce fur. And also leading clothing companies such as the Hennes & Mauritz group, Zara, Esprit, Mango, Mexx, C & A Mode, Peek & Cloppenburg, Sinn Leffers, Appelrath & Cüpper, S. Oliver, Timberland, Otto-Versand, the Kaufhof department stores AG and Woolworths do not sell fur fashion.

Nevertheless, fur seems to be in fashion

Despite the low acceptance in surveys, in recent years fur fashion is being increasingly offered in stores and fashion magazines write about trends in fur. The importance of full- fur coats or fur jackets has been greatly reduced. Instead, more fur trimming and embellishments on cuffs and collars or boots, and accessories such as hats, etc. are offered at lower prices and made available to wider consumer groups.

While real fur is often sheared, dyed or offered as a material mixture andmore and more loses the look and feel of a natural product, fake fur is becoming more realistic. For buyers, it is therefore not easy to recognize whether it is real or fake fur.

Missing labelling

A statutory requirement for labelling on fur products is not yet available in the EU, the labelling of fur products is generally insufficient. It often lacks even a basic indication of whether it is real or fake fur. Information on the species or geographical origin is often not available and salespeople can rarely provide details. Instead, there are always misleading designations, e.g. the fur of raccoon dogs is known as Finn-raccoon, sea fox, tanuki and Chinese or Russian raccoon.

In order to be able to at least distinguish between real or fake fur in the future, in 2010, the EU decided on a new regulation for textile labelling. From 2014, any parts of a textile that have animal origins must be labelled as such. The marking must not be misleading and must be understood by the consumer without difficulty. Further information regarding the species used, its origin and keeping conditions is not required, however, members of the European Parliament are calling for its introduction[7].

Environmental and consumer protection in the fur industry?

For several years, the fur industry has been intensively marketing furs as an ecological and valuable natural product with a high cuddle factor. Some advertising claims:

- *"Fur is a piece of nature, like leather and linen, like cashmere and silk.(...) "As a purely natural product, fur also gets high marks from an ecological point of view."*[8] / German Fur Institute
- *"Fur is a natural product, based on the sustainable use of renewable resources."*[9] / International Fur Trade Federation

[7] http://joerg-leichtfried.at/2011/11/leichtfried-kennzeichnung-von-pelzen-muss-verbessert-werden/
[8] http://www.pelzinstitut.de/html/pelz_ist_etwas_besonderes.html
[9] http://www.iftf.com/#/facts-sheets/2/

- *"...fur is nature's most beautiful natural fibre and one of the most environmentally sensitive choices a consumer can make."*[10] / Fur Commission USA

The second "Poison in Furs" report shows that furs are not a non-toxic, healthy or environmentally friendly natural product. Even the livestock on fur farms is associated with high environmental contamination. This is because under the wire cages the excrement of thousands of animals piles up. The tons of sewage release phosphates and nitrogen compounds into the soil and watercourses and contaminate them. Thus, some fur farms have already been closed because of danger to the environment and studies in Canada show that the water quality of lakes was drastically worsened by nearby fur farms[11] [12].

The manufacture of fur fashion is very chemical and energy intensive. Often, raw hides, on their way to becoming a garment, are transported halfway around the world - for example, from Europe to Asia. When they become finished fashion items, they travel the same route in the reverse direction. Many processing steps such as drying and tanning of the skins are very energy-intensive and heavily pollute the environment with contaminants[13].

As this report shows, harmful substances are found again in the final product. Many of the furs examined contained hazardous chemicals such as formaldehyde, chlorinated paraffins, polycyclic aromatic hydrocarbons and nonylphenol ethoxylates (NPEO) in worryingly high concentrations.

Thus, the flowery advertising the fur industry is exposed as lies. Fur is neither ecological nor natural. Anyone who wears fur on their body may endanger their health.

Aims and demands of FOUR PAWS:

For the people

Furs should no longer be contaminated with toxic residues. Strongly binding statutory limits must be adopted for fur products by national governments and the EU. Compliance with the limit values must be monitored by the responsible authorities more closely than has been the case up to now.

The fur and fashion industry and trade must ensure that no hazardous chemicals are used in the production of fur and that potentially harmful contaminations for the consumer are excluded. At least, they must comply with statutory limits, regulatory benchmarks and the maximum values of industry standards like "SG Leather" and "IVN (International Association of the Natural Textile Industry)". As part of theis

[10] http://www.furcommission.com/environ/index.html

[11] A WATER QUALITY SURVEY OF NINE LAKES IN THE CARLETON RIVER WATERSHED AREA YARMOUTH COUNTY, NOVA SCOTIA Prepared by Water & Wastewater Branch Nova Scotia Environment Darrell Taylor Project Lead March 18, 2009

[12] A WATER QUALITY SURVEY OF TEN LAKES IN THE CARLETON RIVER WATERSHED AREA YARMOUTH AND DIGBY COUNTIES NOVA SCOTIA Prepared by Water & Wastewater Branch Nova Scotia Environment Darrell Taylor Project Lead October 2010

[13] The Humane Society of the United States (2009): TOXIC FUR: The Impacts of Fur Production on the Environment and the Risks to Human Health

product responsibility, they must also ensure that the production of fur is carried out with good occupational and workplace safety and environmental protection.

For the animals

- A legal ban on fur farming and an end to the trading of fur products.
- A legal requirement to label fur products with clear information on the species, the geographic origin and the rearing conditions.

For people and animals

- Dispense with the purchase of fur products.

Hamburg, 18 November 2011

Thomas Pietsch
FOUR PAWS

1.2 Foreword by Dr. Hermann Kruse, Institute for Toxicology and Pharmacology at the University of Kiel

The contaminant analyses of fur products carried out by the Bremer Environmental Institute on behalf EcoAid by Manfred Krautter and Vier Pfoten – Animal Protection Foundation shows, with alarming clarity, that the highly poisonous chemical cocktails in these products throw a great deal of doubt on the claim "Feel good in your second skin" made by the fur industry in its advertising.

The buyers of expensive fur products are shown which hazardous substances they are exposed to when they are wearing furs. The first ones affected by the pollutants are the tannery workers. We usually have no knowledge as to whether the occupational safety measures have been satisfactorily met outside of Europe. What must not be forgotten is that the salespeople are also exposed to the contaminants in the fur products. In the past there have been several reports of sales people being affected by high levels of pollutants. Especially people that wear furs as head coverings, neck warmers and directly on the skin need to be warned.

The executed contaminant analyses take into account tanning residues, dye components, heavy metals, preservatives and insecticides. That this hereby covers all of the hazardous substances found in furs is doubtful.
Thus, e.g. the contamination caused by chemicals used in the production and processing is not analysed even though the toxicity of these chemicals cannot be ignored. What is known is the occurrence of highly toxic dioxins in chlorophenols.
To estimate the health risks, the toxicity profiles of the substances found in the fur in significant quantities must be known:

In addition to the **chromium salts** used in the tanning, the **formaldehyde** used in the finished fur products was detected in an amount up to 550mg/kg! Formaldehyde can cause irritation upon contact with skin. Furthermore, even small amounts of formaldehyde being taken in by bodies has been shown to trigger asthma and bronchitis. **Alkylphenol ethoxylates and alkylphenols** (also including nonylphenol) in concentrations in fur products up to 2500mg/kg are used for the degreasing of skins. The critical effects include disturbances to the human hormonal system. This is particularly well documented for nonylphenol. From the perspective of toxicology, the **chlorophenols**, which are used in the preservation process, are of particular concern when they transfer from the fur product into the organism. Following the prohibition of pentachlorophenol, less chlorinated chlorophenols were used for preservation although their toxicity - not least because of the dioxin contamination – is no less than that of pentachlorophenol. These chemicals have

been known to cause kidney and liver damage as well as skin lesions. Finally the **aromatic amines** are mentioned because of their high carcinogenic potential. If they are able to be detected in the fur product then that is a sign of incomplete implementation of the dyeing process of the fur.

The presentation of the selected toxic substances that were detected in the fur products should be sufficient to show that there are health risks caused by the pollutants in the furs. Whether the individual substances in the mix also reinforce the effects is difficult to prove but should be assumed.

It is thanks to VIER PFOTEN – Animal Protection Foundation that the critical consumer can be made aware of the health risks posed by the cocktail of pollutants in fur products and at the same time warn the industry to be much more circumspect in their use of toxic substances in production.

Kiel, 2. December 2011

Dr. Hermann Kruse
Toxicologist
Institute for Toxicology and Pharmacology at the University of Kiel

2 Summary

There is no doubt that every item of fur clothing could tell a story - a story that deals with monstrosity. It usually begins with the imprisonment of wild animals in fur farms in China or Northern Europe. It then leads to dirty and poisonous work places at tanneries and furrier's workshops in Eastern Asia. Not only the workers but also the environment suffers from the use of poisonous chemicals. The story continues in the luxury shops and department stores in Europe where the workers are often engulfed in a cloud of poison when they unpack the wares. And finally, the expensive but unnatural end product goes over the sales counter. The buyer, innocent consumers and even children, are ultimately exposed to hazardous chemicals from the fur products year after year.

The health hazard that fashionable fur products could represent for consumers or the sales personnel has hardly been studied. The report "Gift im Pelz I" ("Poison in Furs I"), published by FOUR PAWS and EcoAid at the end of 2010, made clear for the first time how high the contamination of many of the fur products sold in Germany is and what health risks they may pose.

Comprehensive Investigation of Hazardous Substances in Fur Products

The report "Poison in Furs II" presented here contains the most comprehensive investigation of hazardous substances and chemical contaminants in fur articles from the fashion industry that has ever been published in Europe. For this, FOUR PAWS and EcoAid significantly expanded the scope of the test in comparison to the investigation carried out in 2010:

- **Fur products from seven European countries** were purchased and investigated. The items of clothing came from Bulgaria, Germany, Great Britain, the Netherlands, Austria, Rumania and Switzerland.
- **35 fur articles** were examined for chemical residue for this report. This is three times more samples than in 2010.

- **Fur articles from many internationally famous fashion brands were tested for this report**

Figure 1 Selection of investigated fashion brands

- **The furs were investigated for 17 toxic substances and chemical groups that are known health hazards**

The Bremer Umweltinstitut (Bremen Environmental Institute), a certified and especially well-qualified laboratory, the Bremer Umweltinstitut, investigated the samples for the following 17 hazardous substances and chemical residues:

Aluminium salts	Lead salts	Glutaric dialdehyde
Alkylphenol-ethoxylates (Nonyl- and Octylphenol Ethoxylate) as well as Nonyl- and Octylphenol	Boron salts	Organotin compounds (MBT and others)
Amines from Amino dyes	Chlorinated Paraffins	Polycyclic Aromatic Hydrocarbons (PAH)
AOX – Halogenated organic compounds	Chlorophenol, Chlorocresol, o-Phenylphenol	Mercury
	Chromium salts	Other heavy metals
	Dimethylfumarate	
	DDT	
	Formaldehyde	

Table 1: Investigated hazardous substances and chemicals

Blind monitoring by the state

Meaningful information dealing with the actual chemical contamination of fur products sold in Europe today was almost impossible to find even within the framework of the comprehensive preliminary research for this report. Fur articles are only seldom inspected by the state, even though questionable chemicals are often found in related product groups like leather and textiles – and it's not a seldom occurrence that the chemicals are found in higher concentrations than the legal limits.

Hazardous substance limits for furs – regulatory deficits by legislators

Whereas for textiles, and even for leather, there is a comprehensive body of legislation of European and national statutory limits and benchmarks, furs have obviously been simply forgotten by the legislators. This regulatory gap means that even if extreme concentrations of hazardous substances were found, for most of the chemical residues there is no legal basis for making a complaint with the regulatory authorities. However, wherever possible (s. Chapter 9.12), this step will be taken.

For this report the – few – available European and national limits and benchmarks from the governmental were gathered and expanded with industrial benchmark standards and through evaluations from independent organisations. EcoAid, with the aid of toxicologists, also derived its own benchmarks for the hazardous substances and chemicals investigated and it has also used these in the evaluation of the investigated products. Each chemical detected in an examined fur article is therefore evaluated in three ways: According to the EcoAid standards, to voluntary standards set by the garment and leather industries as well as according to statutory guidelines, if these were available (Chapter 6).

Product purchasing: Faulty labeling

In seven European countries, furs and textiles with fur parts were bought in retail shops or ordered online between February and April 2011. The furs were from foxes, minks, raccoon dogs, nutria and seals. However, in many cases our investigation (Chapter 8.2) showed that the furs were not from the species that was declared on the product.

The articles investigated included jackets, overcoats, vests, key rings, millinery, caps, collars, mufflers, scarves and hood edgings. The investigated products also included four children's jackets.

It was only possible to determine the production location for some of the furs and for even fewer articles it was possible to determine the country in which the fur-bearing animal was kept (Chapter 8.1).

The Most Important Results

Chemical cocktails in the fur: 15 suspicious hazardous substances detected

15 of the 17 chemicals and chemical groups that our laboratory was testing for confirmed the suspicion of contamination: The substances were actually detected in at least some of the fur articles that were investigated (Chapter 9).

	Investigated suspicious substances and substance groups	Application	Suspicion confirmed through laboratory proof	Proportion of contaminated fur products as a percentage 2011	Proportion of contaminated fur products as a percentage 2010
1	Aluminium salts	Tanning	yes	High (Test only in the preliminary investigation)	Not investigated
2	Alkylphenol ethoxylate (Nonyl- and Octylphenolethoxylate) as well as Nonyl- and Octylphenol	Degreasing, washing and cleaning agent	yes	100%	90%
3	Amine and Amino dyes	Dye	yes	100% of the dyed furs	Not quantified
4	AOX – Halogenated organic chemicals	Preserving agent among others	yes	100% of the samples	0%
5	Lead salts, soluble		yes	11%	Not investigated
6	Boron salts, soluble		yes	3%	Not investigated
7	Chlorinated paraffin	Greasing agent or impregnation	yes	3%	8%
8	Chlorophenol, Chlorocresol, o-Phenylphenol	Preserving agent	yes	26%	Not quantified
9	Chromium salts as well as the especially poisonous chromium (VI)	Tanning chemicals	yes	Total chromium 100% chromium (VI) 0%	Total chromium not investigated, chromium (VI) 0%
10	Dimethylfumarate	Preserving agent	no	0%	0%
11	DDT	Insecticide	yes	3%	Not investigated
12	Formaldehyde	Tanning chemical, aid in the polishing and dyeing processes	yes	100%	100%

	Investigated suspicious substances and substance groups	Application	Suspicion confirmed through laboratory proof	Proportion of contaminated fur products as a percentage 2011	Proportion of contaminated fur products as a percentage 2010
13	Glutaric dialdehyde		no	0%	0%
14	Organotin compounds (MBT and others)	Preserving agent	yes	3%	Not quantified
15	Polycyclic aromatic hydrocarbons (PAH)	Moth proofing agent, contaminated oils	yes	29%	approx. 25%
16	Mercury, soluble		no	0%	Not investigated
17	Further heavy metals	e.g. Antimony, arsenic, copper, cobalt, thallium, nickel, zirconium, tin, titanium, zinc	yes	Individual findings (checked in the preliminary investigation)	Not investigated

Table 2 Detected hazardous substances 2010 and 2011

Evaluation of the fur samples

The evaluation of the hazardous substance contamination in the fur products investigated shows that a large proportion of the examined samples are contaminated with questionable chemicals to such a degree that a health hazard to the consumer, not to mention the shop employees, cannot be excluded. In some cases there is even an increased probability of health impairments.

The evaluation is carried out of the basis of four grades (Chapter 9.3):

- 14 percent of the samples are Grade 4 (red): Very strongly contaminated and very critical for health. Legal limits are exceeded. In addition, voluntary limits by industry and the EcoAid safety limits are exceeded.
- 83 percent of the samples are Grade 3 (orange): Strongly contaminated and critical for health. Voluntary limits by industry and the EcoAid safety limits are exceeded.
- 3 percent of the samples are Grade 2 (yellow): Contaminated and not recommended. EcoAid safety limits are exceeded,
- 0 percent of the samples with "without claim" (Grade 1, green)

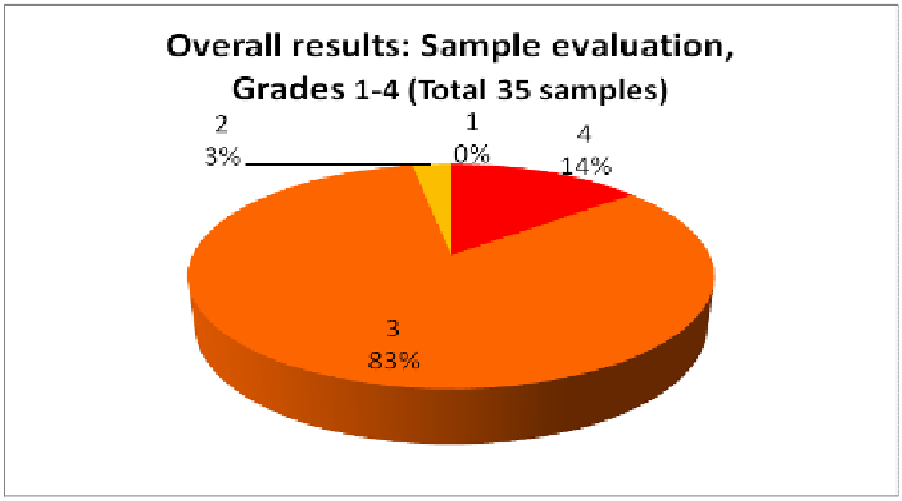


Figure 2 Results of the main investigation of this report
Grade 1: Best grade green „without claim" 0%
Grade 2:yellow „Contaminated and not recommended " 3%
Grade 3: orange „Strongly contaminated and critical for health" 83%
Grade 4: Worst grade red, „Very strongly contaminated and very critical for health " 14%.

No improvement compared to 2010

Although the 2010 report "Poison in Furs I"received a lot of attention and sparked some heated debates[14], the industry seems to have suffered no consequences from it. The contamination of the furs investigated in 2011 seems to have even increased in comparison to the products investigated in 2010:

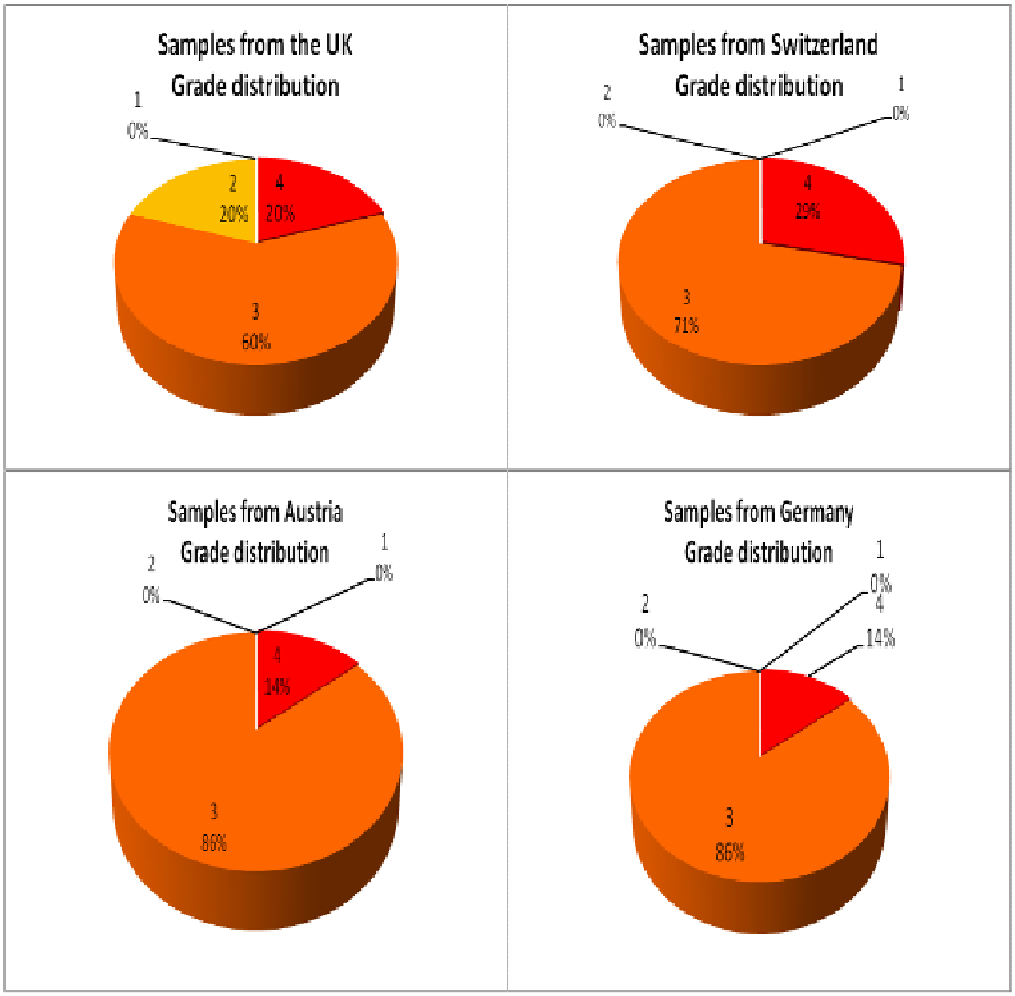
Hazardous substance/Chemicals	Proportion of contaminated samples in %		Trend
	2010	2011	
Alkylphenol ethoxylates and Alkylphenols	90	100	
Chlorinated paraffins	8	3	
Formaldehyde	100	100	
Polycyclic aromatics	approx. 25	29	
Glutaric dialdehyde, Dimethylfumerate	0	0	

Table 3 Contamination trend 2010-2011

[14] e.g. German Fur Industry: www.pelzinstitut.de

Evaluation according to country of purchase

Four countries have five or more fur products available so that a comparison of these countries is at least partially possible. The samples bought in Switzerland show the greatest proportion of very strongly contaminated fur products (Grade 4). The products from Germany, Austria and Great Britain jointly occupy a bad second place. Samples from the UK had the second highest rate of very strongly contaminated fur products (Grade 4) but a lower percentage of Grade 3 samples compared to the other three countries.



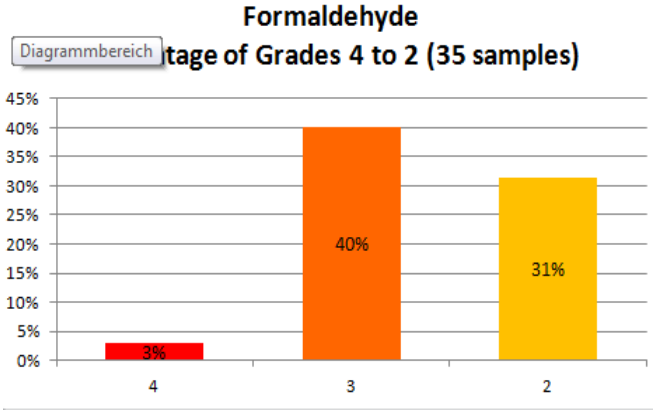
Grade 1: Best grade green „without claim" 0%
Grade 2:yellow „Contaminated and not recommended " 3%
Grade 3: orange „Strongly contaminated and critical for health" 83%
Grade 4: Worst grade red, „Very strongly contaminated and very critical for health " 14%.

Evaluation of the most relevant hazardous substance contamination

The bad evaluation of the fur products was primarily caused through significant contamination with nine chemicals or hazardous substances. The findings concerning these substances are presented in more detail in Chapter 9.2 and are only briefly outlined in the following.

1. **Carcinogenic and allergenic formaldehyde: 74 percent of the samples were strongly to very strongly contaminated**

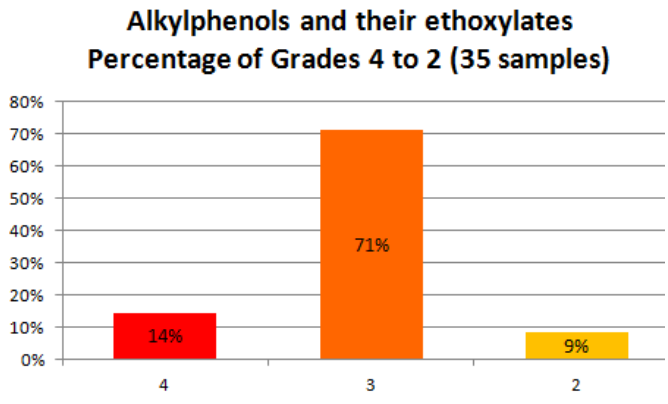
Formaldehyde is volatile, can be easily inhaled, is carcinogenic and can trigger allergies. The highest value tested was 550 milligrammes per kilogramme and was thereby significantly higher than the maximum value measured in furs in 2010 (450 mg/kg).



Formaldehyde is, next to alkylphenol ethoxylates, the most frequently detected chemical in the fur products, with usually highly elevated concentrations. A total of 74 percent of the samples were evaluated with a grade from 2 (contaminated, not recommended) to 4 (very strongly contaminated, very critical for health) (Chapter **Error! Reference source not found.**). In 43 percent of the samples the industrial limits of both the SG Leather Standards and the ÖkoTex 100 Standards were exceeded. This makes it clear that the fur industry hardly observes their own voluntary standards. In one sample, the recommended value of the German Federal Institute for Risk Assessment was exceeded for a product label. The precautionary EcoAid benchmark value was exceeded in 74 percent of the products.

2. **Hormonal disrupting alkylphenols and ethoxalates: 94 percent of the samples were strongly to very strongly contaminated**

Alkylphenols behave like the hormone estrogen and can interfere with the hormonal system of people.



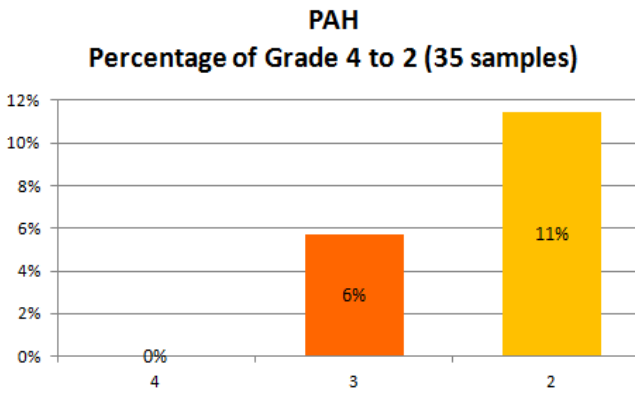
These chemicals were detected in all fur products investigated. The concentrations found ranged up to 2500 milligrammes per kilogramme and were thereby at the top of all the residue values measured.

The use of alkylphenol ethoxylates is

forbidden in the EU. Additionally, should the products be processed in the EU, they can only contain a maximum of 1000 milligrammes per kilogramme. Therefore, as 14 percent of the samples exceeded this value, there is the suspicion that the law was violated in the production (Grade 4).
The voluntary industrial standard for APEO was exceeded in 85 percent of the products investigated. The precautionary EcoAid benchmarks were even exceeded in 94 percent of the products. (Chapter 9.2.1)

3. **Carcinogenic polycyclic aromatic hydrocarbons (PAH): 17 percent of the furs were strongly contaminated**

In 17 percent of the products the concentrations of PAH were over the EcoAid benchmark, which is based on the recommendations of the German Federal Institute for Risk Assessment BfR. In six percent of the cases even the voluntary standards of the industry were exceeded. We were unable to find a directly applicable statutory limit.



4. **Further hazardous substance contaminations**

- DDT:

It was clearly revealed that there has been a serious breach of the Stockholm Convention of the United Nations in Switzerland. 79 milligrammes per kilogramme of the internationally banned pesticide DDT was detected in a fur product. The use of this substance is illegal. S. Chapter 9.2.5.

- Heavy metals

In nine percent of the furs examined there were critically elevated concentrations of heavy metals like chromium, lead, mercury as well as boron detected. S. Chapter 9.2.10

- Amines

In twelve percent of the furs examined there were critically hazardous amino compounds detected in concentrations above the EcoAid benchmark value. In nine percent of the products the chemicals, which came from the dyes used, also exceeded the benchmarks set by the industrial standards.

- Preserving agents

In six percent of the samples critically hazardous preserving agents like ortho-phenylphenol were measured in concentrations above the EcoAid benchmark. In three percent of the products, the benchmarks of the industrial standards were also exceeded.

- Chlorinated paraffin

In one sample medium chain chlorinated paraffins were found in concentrations that exceeded the EcoAid benchmark value.

- Organotin compounds

In one sample an elevated level of monobutyltin was detected which was over the EcoAid benchmark value as well as also being over the benchmarks of the voluntary industrial standards.

12 occasions for legal proceedings

In at least twelve cases, the contamination of the fur products was so high that it was probably in breach of statutory requirements. In these cases, EcoAid recommends reporting back to the responsible regulatory authorities to begin legal proceedings as well as reporting to the RAPEX system for product warnings in the EU. The authorities should also be called upon to investigate the products currently being sold (Chapter 9.12).

Consumer fraud – Retailers are selling furs with incorrect animal names

A portion of the fur products that we examined were labelled by the manufacturer or retailer with the incorrect species. This was shown by the special test that was done on the hair at the request of FOUR PAWS (Chapter 8.2). Particularly frequent was the selling of products labelled as raccoon fur instead of as raccoon dog fur.

Conclusion

Furs are mostly hazardous chemical products

The result of the test is clear: The furs in the fashion industry are not natural products - quite the opposite in fact: the sold fur coats, fur collars, fur hats, fur scarves etc. are usually significantly contaminated with health-impairing chemicals - substances that cause cancer, reproductive problems, allergies, nerve damage, mucous membrane irritations or disruptions in the hormonal balance.

"Fur is a piece of nature, like leather and linen, like cashmere and silk. The proverbial feeling good in the "second skin" is able to be explained physically and even confirmed through measurements ... As a purely natural product, fur also gets particularly high marks from an ecological point of view."

The claim of the German Fur Institute of the fur industry is refuted by the test results presented.

The origin of the chemicals detected is clearly in the production and preservation of the fur products. Between the time that the fur is on the animal and the time that it is a fur product, it is subjected to numerous chemical processes for tanning, preservation, cleaning, dyeing and other treatments (Chapter 5.2). These processes are often carried out in countries in which the use of especially poisonous chemicals is still common practice. A number of the substances used are health hazards and major threats to the environment. These include: heavy metal salts, solvents, pesticides, formaldehyde, preservatives, bleaching and dyeing chemicals and many more besides (Chapter 5.2). Their residues remain on the fur products for a long period of time.

The fur and fashion industry as well as retailers need to ensure that no hazardous chemicals are used in the production of furs and that employees and consumers are excluded from potentially hazardous contaminations. They have to at least ensure that legal limits, regulatory benchmarks and the maximum values of industrial standards like "SG Leather" and "IVN (International Association Natural Textile Industry e.V.)" are observed. As part of its product responsibility, industry and trade need to provide suitable work place safety and environmental protection in the production of furs.

The majority of the hazardous chemicals detected have no specific statutory limits for fur articles. However, given the proven high levels and frequent contaminations, such limits are obviously necessary. These gaps in the legislation must be closed by the national governments and the EU. In addition, the contamination of fur products needs to be monitored by the national authorities better than has been the case up to now.

Consumers should avoid purchasing fur products for reasons of animale welfare and on the grounds of precautionary health protection.

3 Original German Report

The original report "Gift im Pelz II" was published by FOUR PAWS and should be used as reference.

4 Aim of the Report

When the issue of "Fur" comes up, most of us probably think of expensive fashion items and then of repeatedly denounced abuses at fur farms, breeding, hunting or killing fur-bearing animals like minks, foxes or raccoon dogs. Whether and what health risks are posed to consumers and salespeople by fur fashion products has hardly been studied. The report "Poison in Furs", which was created by EcoAid for FOUR PAWS in 2010, illuminated the situation for the first time and brought significant abuses to light.

With this new report to be published at the end of 2011, the hazardous chemical residues in fur products should be covered in even more detail through the investigation of further substance groups. Furthermore, with a larger number of samples being investigated from a total of seven European countries, this second test programme should give a comprehensive insight into the hazardous substance contamination of the fur products sold by the fur industry on European markets.

The furs used in the fashion industry are not natural products. Between the time that the fur is on the animal and the time that it is a fur product, it is subjected to numerous chemical processes for tanning, preservation, cleaning, dyeing and other treatments. These processes are often carried out in countries in which the use of especially poisonous chemicals is still common practice. Then how high is the health risk when wearing fur products?

Little meaningful information about the critical chemical contamination of fur products could be found even in the preliminary research done for our report. In specialist literature and government regulatory authorities, we found that there was information about hazardous chemical contamination in leather and textile products but none for fur products. The head of a research laboratory simply explained the lack with the fact that financing for the purchase of expensive fur samples could hardly be found.

Some of the processes used in the manufacturing of furs are similar to those used for leather and some textiles with regard to colouring and preservation. Leather and textiles are among the product groups in which hazardous chemicals are often detected by governmental and private research laboratories – often in concentrations above the statutory limits. For this reason, the governmental controls for leather and textile products have been tightened in recent years. But what about the chemical contamination of fur products which are hardly monitored at all?

The aim of this report is to close the gap in our knowledge regarding poisonous substances and chemical residues in fur fashion products. It should show, whether and what dangers consumers could be exposed to by chemicals in fur products.

4.1 Methodology

Identify potentially hazardous substances in fur products:

The aim of this report was firstly to determine what chemical residues, hazardous substances and contaminants could be found in fur products.
To do this, general and specialist literature was consulted, online databases for specialist literature were accessed and interviews with experts in the field were carried out. Moreover, we called on the experiences we had already gained in the creation of the first report.

The hazardous substance contamination of fur samples obtained from retail outlets in Bulgaria, Germany, Great Britain, the Netherlands, Austria, Rumania and Switzerland was investigated and evaluated:

The main part of this report is dedicated to the presentation and assessment of the hazardous substance and chemical contamination of fur samples which were purchased in 2011 in the named countries and investigated on our behalf. The investigated fur products came mostly from minks, foxes and raccoon dogs.

Again, the laboratory testing was carried out by the Bremer Environmental Institute, which, like in 2010, proved again to be a competent and effective accredited research laboratory.

In the preliminary study, composite samples were initially analysed to identify the types of existing chemical contaminants and residues. Where suspicions arose, they were quantitatively determined from individual samples in the main study.

The evaluation of the detected chemical residues was carried out based on statutory standards, industrial standards and also the precautionary assessment procedures of EcoAid.

5 From Animal to Fur

5.1 Fur-bearing Animals and Animal Husbandry

(An article from Thomas Pietsch, FOUR PAWS)

5.1.1 Global Fur Production

Fur is a current fashion trend again in 2011. Fur production around the world has been running at a high level for years. At least 85 percent of the furs being traded come from the breeding of fur-bearing animals. Not every country keeps official statistics concerning fur production and the fur market. According to the European Fur Breeders' Association, EFBA[15], there are 7200 fur farmers in the European Union. The countries with the highest production in Europe are Denmark and the Netherlands for minks and Finland for foxes. 30 million furs of the global mink fur production and 2.1 million furs of the global fox fur production come from European farms. According to EFBA this accounts for 60 percent of the global mink fur production and 56 percent of the global fox fur production[16]. And with this, the EU is the world's largest producer of furs.

An investigation of the fur-bearing animal branch in China, conducted by the United States Department of Agriculture[17], came to another conclusion. The study, conducted in 2010, accessed the data from China's Academy of Agricultural Science. The study attests to China being by far the largest fur producer in the world. It estimates that 30 to 35 million minks, 15 million foxes and 10 million raccoon dogs were being kept in Chinese fur farms in 2009.

On the basis of these figures, in the most important regions for fur farming – Europe and China – there are an estimated 60 to 65 million farm spaces for minks, 17 million for foxes and over 10 million for raccoon dogs. When further species are included, like chinchillas, coypu, polecats or sables, and further production areas, like North America and Russia, it can be estimated that considerably more than 100 million animals are killed for their furs every year.

5.1.2 Mink, Fox and Raccoon Dog Farming – Farm Animal or Wild Animal?

Foxes and minks have been bred for a good 100 years, chinchillas for 80 years and raccoon dogs for 40 years. The breeding is principally done based on economically interesting characteristics like fur quality and litter size. Adjusting the keeping conditions to suit the needs of the animals hardly plays a role on fur farms. To compare: Most domestic and farm animals like dogs, chickens or pigs, went through a domestication process that lasted 5000 years or more. Fur-bearing animals like minks, foxes or raccoon dogs are therefore not

[15] http://www.efba.eu/fact_sheet.html

[16] http://efba.eu/download/annual_report/2010/files/efba_annualreport2010_07_web_high.pdf , Page 14

[17] China – People's Republic of: Fur Animals and Products. USDA Foreign Agricultural Service; Global Agricultural information network (GAIN) Report Number: CH10031. (2010)

domesticated and what we are dealing with is wild animals[18] [19] [20]. As such, these fur-bearing animals continue to exhibit the characteristics and needs of their relatives living in the wild. Accordingly, fur-bearing animals are classified as wild animals in e.g. the Swiss Animal Protection Regulations. In Switzerland, they may only be held following the minimum requirements for (non-domesticated) zoo animals in relatively spacious enclosures.

The globally established method of keeping wild animals in closely packed cages leads to a multitude of adverse effects. The typical keeping conditions on fur farms result in constant physical and behavioural-biological stresses being placed on the animals[21]. The farm animals cannot live out their species specific behaviours and display numerous behavioural disorders. The constant stress leads to the development of apathy, stereotypical behavioural patterns, cannibalism and self-injuries.[22]

Minks

American minks (*Mustela vison)* are kept in small wire cages on fur farms. The individual cages are suspended in a long line above the ground. The area of the cages used in Europe is usually about 0.25 m². There is a requirement for the cages to be 70 cm long, 30 cm wide and have a height of 45 cm. A living box with solid walls, which is about the size of a shoebox, is placed within this. Otherwise, there are no other structures added to enrich the cage environment.

In North America, the dimensions of the cages are even smaller. Mink farms in Canada are based on the "Current Code of Practice for the Care and Handling of Mink (1988)"[23]. According to this code, cages for males older than 9 months and for young vixens may not be smaller than 0.21 m². All other minks may be kept in wire cages with an area of 0.12 m². To compare: the surface area of the BILD newspaper is easily 0.19 m². The minimum height of the cages for these animals which love to climb is fixed at 32 cm.

In all keeping systems, the faeces and urine of the animals fall directly through the wire grating onto the ground. The odor-sensitive animals are exposed to the stench of their own excrement for their entire lives. As a rule, breeding animals are housed individually. The young animals that are being raised for their fur are generally housed in pairs until the time

[18] From diverse publications, e.g. Swiss Animal Protection Ordinance (1998), Report from the Ethical Committee of the Norwegian Department of Agriculture (1994)

[19] Standing Committee for the European Convention for the protection of animals kept for farming: Recommendation concerning fur-bearing animals (1999), Article 2: ... the following biological characteristics should be considered as fur-bearing animals on fur farms retain characteristics of wild animals."

[20] EU Press release on fur farming, 19 December, 2001: 'The Committee finds that minks and foxes generally suffer from being kept in cages because it limits their natural behaviour as wild animals'.

[21] 15 Winkler (1990): Survey on the welfare of wild animals held for the purpose of fur production

[22] See also the Minutes of the Federal Chamber of Vetinary Surgeons (2000): "The keeping of fur-bearing animals is generally excluded on the grounds of animal protection."

[23] http://www.nfacc.ca/codes-of-practice/mink

they are killed. A corrugated metal roof protects the animals from rain but they are exposed and vulnerable to summer heat. They are usually fed with a type of nutritional mash which is smeared over the wire cage. Licking the food up satisfies the animals' hunger but does not satisfy the instinctual predatory urge to bite in any way.

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It is obvious that the minks have no possibility of following their natural behaviour under such living conditions. Depending on the food supply, the natural home of minks range between 0.5 and 6 kilometres in size. Males can travel distances of up to 30 kilometres.

Under farm conditions, the animals receive almost no stimuli from their environment and these highly mobile animals have very limited possibilities for movement. In the wild, minks live mostly in and around water. There they hunt and have their burrows. In Germany, legislators have ordered mink farms to provide the possibility of swimming from 2016. A current study, carried out on the request of the Federal Ministry for Food, Agriculture and Consumer Protection (BMELV)[24], shows that minks welcome and continuously use the possibility to swim and that this has a positive effect on their well-being. However, the animals on fur farms are denied bathing places for swimming and diving. In the tiny cages they cannot climb, hide or interact with other animals in a specie-appropriate way or even evade other animals[25]. This leads to aggression towards their fellows, eating hair and biting tails. Studies show that 70 percent of the minks found on farms demonstrate stereotypical behaviour[26].

Overview American Minks (Mustela vison / Neovison vison)

[24] Hagn, Heyn, Langner, Thurner and Erhard (2010): Free-range farming of American Minks – Water tank design. Official Vetinary Service and Food Control, 17th year – 2/2010

[25] See also Nimon and Broom (1999): The welfare of farm minks in relation to housing and management: a review

[26] De Jonge (1987): The welfare of farm minks

Natural way of life[27] *Biology*	*Zoo conditions (Minimum requirements*[28]*)*	*Conditions on fur farms*[29]
Lifestyle strongly tied to water (webbed feet!) Home ranges, ideally on a 6 kilometre strip of shoreline Loners, especially males react aggressively to their fellows	Enclosure with min. 6 m^2 surface area with a natural floor For minks, 50 percent of the enclosure must be water with a structured bank Climbing branches, hollow logs, elevated lying platform.	Wire cage with between 0.12 and 0,25 m^2 surface area Living box Thousands of animals in adjacent cages

The approx. 20 to 25 mink farms in Germany must observe increased minimum requirements from 12 December 2011. From this date onwards, the Animal Welfare Livestock Regulation stipulates that mink cages must contain a minimum of a square metre of space per animal with a minimum cage size of 3 m^2 regardless of whether fewer than 3 animals are in the cage or not. This is 12 times larger than the normal cage size being used in Europe today. From 2016, 50 percent of the floor must be solid and the minks must have the possibility to climb and to swim. Whether German farmers will implement these requirements in practice remains to be seen.

In this study, four mink furs were investigated (samples 02BG, 01UK, 04CH, 05CH).

Foxes

Red foxes (*Vulpes vulpes*, as a colour variant of the silver fox) or Arctic foxes (*Alopex lagopus* as a white or blue fox) are kept on European fur farms. The fox cages for individual animals have about 0.8 m^2 surface area, are about 70 cm high and are completely made of wire mesh. As in the mink cages, the animals must move about on wire. As a rule, the cages are only outfitted with a water vessel – vixens (female foxes) are only given a living box when it is time for them to have their young. The feed mash is smeared on the wire grating of the cages.

[27] Combined from http://animaldiversity.ummz.umich.edu/site/about/overview.html, www.pelzinfo.ch / Zurich Animal Protection as well as Puschmann, Zscheile, Zscheile (2009), 5. Ed. : Mammals – Keeping of zoo animals in captivity.

[28] Opinion on minimum requirements for the keeping of mammals, BMELV (1996)

[29] Standing Committee of the European Convention for the protection of animals kept for farming purposes (1999): Recommendations regarding fur-bearing animals

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In Canada, the wire cage for vixens with their young and for fully grown animals should be at least 1.1 m² large in accordance with the "Code of Practice for the Care and Handling of Ranched Fox (1989)"[30]. A nesting box must be provided for the raising of young animals. Juvenile foxes or animals housed in groups may be kept in smaller cages with surface areas between 0.74 m² and 0.84 m².

In their natural habitat, depending on the food supply, foxes inhabit large home ranges and travel large distances. Burrows are used as resting places for breeding and raising the puppies. The typical fox cage, however, in no way provides the structured environment in which the animals can behave according to their needs. They are severely restricted in their movement and have nowhere to retreat to. The foxes cannot even fulfil their natural urge to dig and create caves. As a result of being kept on wire grids the animals often suffer damages and injuries to their feet.

These keeping conditions evoke a variety of welfare problems. The foxes' lack of movement leads to bone damage. There are many losses in the procreation and rearing of the young. Cannibalism is a major problem in fox breeding - 20 percent of all puppies fall victim to the vixens. Lack of retreat in the cages also contributes to severe anxiety in the animals. Keeping several adult foxes together in a cage regularly results in aggression and biting.

Overview red fox / silver fox (Vulpes vulpes)

Natural way of life	*Zoo conditions (minimum requirements)*	*Conditions on fur farms*[24]
Territories up to 30 km² depending on the habitat with several burrows, which are frequently changed Young foxes can cover distances of several hundreds of kilometres Lives alone, except in the breeding season, then in small groups with a complex social system	Enclosure of at least 20 m² / couples with grown enclosure floor Sandy soil and digging opportunities Division of the enclosure with possibilities to retreat	Wire cage with 0.8 m² for individual animals and up to 2.0 m² for female foxes with young Nesting box for rearing the young Hundreds of animals in adjacent cages

[30] http://www.nfacc.ca/pdfs/codes/Ranched%20Fox%20Code%20of%20Practice.pdf

Usually shy of humans		

Overview Arctic fox / blue fox (Alopex lagopus)

Natural way of life	*Zoo conditions (minimum requirements)*	*Conditions on fur farms*[24]
When breeding, home ranges of up to 55 km^2 with several burrows Outside the breeding season, nomadic lifestyle in which hundreds of kilometres of covered Lives alone, except in the breeding season, then in small groups with a complex social system Usually shy of humans	Enclosures of at least 20 m^2 / couples with grown enclosure floor Sandy soil and digging opportunities Division of the enclosure into niches with screens (logs, bushes) offers possibilities to retreat. Several nesting boxes and sleeping boxes recommended	Wire cage of 0.8 m^2 for individual animals and up to 2.0 m^2 for female foxes with young Nesting box for rearing the young Hundreds of animals in adjacent cages

In this test, 13 fox furs were examined (samples 01DE, 03DE, 05DE, 06DE, 01AT, 02CH, 03CH, 07CH, 02UK, 02NL, 01BG, 04BG, 01RO).

Raccoon dogs

Raccoon dogs have only been bred in captivity for the last 40 years. Unlike minks and foxes, there are no minimum requirements in the EU (through the Council of Europe). The predators are from the genus canid and, due to their supposedly low food and entertainment needs, are often kept in China (and also in Finland to a lesser extent). Their fur is often used for more favourable fur trimmings.

In the wild, they are nocturnal omnivores that prefer proximity to water courses with dense vegetation. Raccoon dogs swim and dive when hunting for fish. Their home ranges are on average about 10 km^2 large. The animals avoid meeting their fellows and can go into hibernation in hard winters. During their winter hibernation, raccoon dogs either occupy abandoned fox or badger burrows or dig their own burrow. They manipulate objects when demonstrating foraging or exploring behaviours.

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The keeping of raccoon dogs on fur farms is done in completely unstructured mesh wire cages. These standard cages usually have a surface area of between 0.6 and 1 m^2 and are between 60 and 75 cm high. Under these conditions, it is not possible for them to have either sufficient movement or fulfil their behavioural need to explore. The wire mesh floor can cause injuries and deformities of their feet. Due to the inadequate keeping and the proximity to their fellow, these animals are placed under constant stress. The behavioural disorders are displayed through the raccoon dogs gnawing on the bars of their cages and chewing their fur.

Overview raccoon dogs (Nyctereutes procyonoides)

Natural way of life	*Zoo conditions (minimum requirements)*	*Conditions on fur farms* [24]
Ranges between 0.25 and 20 km^2, preferably in dense undergrowth near water Parents jointly raise their young and use fox or badger burrows for shelter Hibernation is possible depending on environmental conditions Non-territorial, avoids its fellows	Enclosures of at least 20 m^2 / couples with grown enclosure floor Sandy soil and digging opportunities Division of the enclosure into niches with screens (logs, bushes) offers possibilities to retreat. Several nesting boxes and sleeping boxes recommended	Wire cage with a surface area from about 0.6 to 1m^2 Nesting box for rearing the young Hundreds of animals in adjacent cages

In this test, 16 raccoon dog furs were examined (samples 02DE, 04DE, 07DE, 02AT, 03AT, 04AT, 05AT, 06AT, 07AT,01CH, 06CH, 03UK, 04UK, 05UK, 01NL, 03NL).

5.1.3 Statutory Protection for Fur-bearing Animals in the EU

Although the Directive 98/58 of the European Union includes fur-bearing animals in the protection of farm animals, it contains only very vague information, from which no concrete requirements for farm keeping can be derived. More specific requirements for minks, foxes and other species (not raccoon dogs however) can be found in the recommendations for fur

farming made by the Council of Europe[31] in 1999. The EU itself and most of its member states have since ratified these recommendations. And with this, they are significant for European countries without any further requirements. The recommendations reinforce the aforementioned cruel keeping of the animals in tiny wire cages, as the following table shows:

Selected minimum requirements from the Council of Europe's recommendations

	Minks	Foxes
Minimum surface area for an individual adult animal	0.255 m^2	0.8 m^2
Minimum surface area for an individual adult animal with young Minimum surface area for two weaned young	0.255 m^2 0.255 m^2	2.0 m^2 1.2 m^2
Minimum height	45 cm	70 cm
Structuring	Additional nesting box required	Desired, however not required: - partitioned area; - elevated platform or nesting box with a roof

Accordingly, the animals on most fur farms are legally held in accordance with the recommendations of the Council of Europe in tiny, featureless wire mesh cages. From the point of view of animal protection, these requirements are scandalous. The recommendations made by the Council of Europe

- contain no scientific statement in terms of fur-bearing animals, but rather the "lowest common denominator" of the 47 State signatories of the Council of Europe as the recommendations had to be adopted unanimously,
- ignore scientific findings on the deficits in fur farming, which are listed in a scientific report of the EU[32] and are still common practice on fur farms today,
- contain strong evidence in themselves that further research is needed (e.g. for minks and others with regard to appropriate freedom of movement, climbing possibilities, access to water and other forms of social behaviour and the urge to explore), which as yet has not been pursued.

[31] STANDING COMMITTEE OF THE EUROPEAN CONVENTION FOR THE PROTECTION OF ANIMALS KEPT ON FARMS (T-AP) Recommendation concerning fur-bearing animals
Adopted at the 37th meeting of the Standing Committee on 22nd June 1999.*)

[32] The Welfare of Animals Kept for Fur Production, Report Of The Scientific Committee on Animal Health and Animal Welfare, Adopted on 12 - 13 December 2001

In summary, it can be stated that fur-bearing animals kept on farms in the EU have insufficient statutory protection. A concrete position on the keeping of fur-bearing animals has not yet been taken by the European Union. The recommendations of the Council of Europe regarding fur-bearing animals ignore available scientific knowledge and do not take animal protection into account as a result of their compromisory nature.

5.1.4 Killing Fur-bearing Animals

The EU Slaughter Regulation[33] defines acceptable procedures and requirements for the EU in the killing of fur-bearing animals. The "fur harvest", that is the killing and skinning of the young animals, is carried out when the animals are about 8 months old. The killing is done through gassing them with carbon monoxide, lethal injection or electrical stunning through electrocution. Animals with less than five kilogrammes of body weight (e.g. chinchillas) can be stunned or killed by a blow to the head with a blunt instrument.

Shocking footage from China shows how the fur was ripped from the living bodies of animals that had not been sufficiently stunned.

5.1.5 Advanced Regulation in Some European Countries

Many European countries have tightened the requirements for the keeping of fur-bearing animals: some countries have either a general ban on keeping fur-bearing animals or they have banned the keeping of specific species. Other countries have increased the keeping requirements for fur farms.

Europeans countries that have prohibitions on breeding fur-bearing animals

Country	Year	Comments
The Netherlands	1995 1997	Prohibition of fox farms Prohibition of chinchilla farms
England	2000	General prohibition
Austria	2004	General prohibition
Bulgaria	2006	No permits for new fur farms, existing facilities were closed (indirect prohibition)
Croatia	2007	General prohibition (Transition period until 2017)

European countries with increased keeping requirements for fur-bearing animals

Country	Year	Comments
Switzerland	1981	Keeping fur-bearing animals in only possible in accordance with zoo standards; there are no fur farms
Sweden	1995	Increased requirements for the keeping of foxes on farms led to the end of keeping foxes in 2000

[33] REGULATION (EG) No. 1099/2009 OF THE COUNCIL on 24th September 2009 concerning the protection of animals at the time of killing.

Italy	2001	Increased requirements for the keeping of minks on farms
Germany	2006	Gradually increasing the requirements for fur farm animals until 2016. Decrease in/end of fur farming expected
Denmark	2007	Increased requirements for the keeping of foxes on farms

In the past 10 years, seven European countries have either banned fur farming or significantly tightened the requirements for fur farming. Eastern European countries have also integrated themselves into this process with Bulgaria and Croatia.

In China, the largest producer of furs in the world by far, there are neither animal protection laws nor specific requirements for the keeping of fur-bearing animals. Documentaries have shown that the conditions that the animals are kept in there are even more catastrophic than in European countries from the point of view of animal protection.

5.1.6 Violations of Laws and Guidelines on European Farms

Even the totally inadequate provisions for keeping fur-bearing animals in Europe are regularly undermined or violated by fur farms. This is supported by recent research by animal protection organisations as well as governmental investigations in the major fur production countries. Investigations of Danish fur farms conducted by the authorities in 2009 showed that two out of three of the 140 mink farms investigated violated the national animal protection laws[34]. Similar results were found in Sweden: Animal protection organisations documented behaviourally disturbed, injured, sick and dead animals on one fifth of the Swedish mink farms between 2009 and 2010[35]. Official investigations conducted in 2010 revealed that 85 percent of the Swedish fur farms do not meet the minimum legal requirements[36]. In Finland, the world's fourth largest fur producer and the largest producer of blue foxes, the conditions in 30 randomly chosen fur farms were documented as part of a seven month study in 2009.[37] During this study, a plethora of violations were recorded on film and photo material. Many animals showed severe injuries to some extent, like missing eyes, bitten tails, deformed legs and open wounds. In addition the housing conditions exhibited clear violations of animal protection. Farms belonging to leading officials of the Finnish fur industry were also affected. Among these farms was the business of the Chairman of Finnish Fur Sales, a company that is closely connected with the Origin Assured label of the fur industry[38] .[39] These results were corroborated by an official inspection in 2010. State veterinarians determined that 60% of the fur farms in Finland violated animal protection guidelines. Criticism in most cases was directed as dangerous cage shapes as well as cage sizes and lack of structural elements[40]. Research was also carried out in Norway

[34] http://politiken.dk/indland/ECE880413/mink-har-daarlige-forhold-paa-to-ud-af-tre-farme/
[35] http://sveketmotminkarna.se/horror-revealed-swedish-fur-farms
[36] http://www.jordbruksverket.se/download/18.32b12c7f12940112a7c80001080 4/Delredovisning+av+uppdrag_1.pdf
[37] Bloody Harvest. The real cost of fur, Animal Defenders International, 2010
[38] http://www.youtube.com/watch?v=uPsSk0EA4wA
[39] http://tarhauskielto.fi/investigation-into-fur-farms-in-finland-2011
[40]

on nearly half of the 300 fur farms from 2008 to 2010. Norwegian animal protection organisations also found various displays of behavioural disturbances here, like cannibalism and self-mutilation[41].

5.1.7 Statutory Labelling of Fur Products in the EU

The possibilities for consumers to inform themselves in shops about important characteristics of the fur products are extremely limited. Fashions with fur trimming are almost never declared clearly and comprehensively. Instead, a large amount of the fur products in shops are inconsistently, often even incorrectly labelled or not labelled at all (see Chapter 8.2). Even basic information about the processed species is often lacking. It is even rarer to find information on the geographic origins of the furs. Information about the conditions in which the animals were kept is missing entirely.

The EU does not yet have a statutory requirement to label fur products. So that consumers (e.g. those with allergies) in the EU have at least the possibility in the future to distinguish fake furs from real furs, a corresponding passage in the new Regulation No. 1007/2011 concerning labelling of textiles[42] was pushed through[43] by the European Parliament in 2011 and will take effect from 9 November 2014. According to Article 12, non-textile pieces of animal origin in textile products must be labelled with the information "*contains non-textile pieces of animal origin*". The labelling or marking may not be misleading and must be done in such a way that the consumer can understand it without difficulty.

The new EU Regulation is a welcome first step towards a better choice for consumers, however from the points of view of animal and consumer protection further regulations urgently needed. Customers will only be adequately informed when it is mandatory for information to be given concerning the species, the geographic origins of the furs and the conditions in which the animals were kept. Written requests from members of the European Parliament to the European Commission (e.g. 17 November 2009 – Fur markets and origin labelling[44] as well as 7 October 2011 – Statutory labelling of textiles with fur trimming[45]) show that detailed labelling of fur and other textiles of animal origin is deemed necessary at the political level.

http://www.hs.fi/kotimaa/artikkeli/Yli%20puolet%20turkistarhoista%20toimi%20vastoin%20lakia/1135266557952?ref=fb-share

[41] http://www.forbypels.no/english

[42] REGULATION (EU) No. 1007/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on 27 September 2011 concerning the labelling of textile fibres and the related labelling and marking of fibre composition in textile products and repealing Directive 73/44/EWG of the Council and the Directives 96/73/EG and 2008/121/EG of the European Parliament and the Council.

[43] EP Press release from 10.05.201, Reference No.: 20110510IPR19126: Parliament votes for new textile labelling regulations for real fur and leather

[44] http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+WQ+E-2009-5913+0+DOC+XML+V0//EN

[45] http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+WQ+E-2011-008927+0+DOC+XML+V0//EN

Regarding the impact of textiles with hazardous chemicals, in Article 25 the law makes the provision for studies on hazardous substances to be carried out, with a special focus on the investigation of allergenic substances:

Until 30 September 2013, the Commission is carrying out a study to assess the causal link between allergic reactions and the chemical substances used in textile products or mixtures thereof. Based on this study, the Commission will, when appropriate, propose legislative changes in the regulations of the Union.

5.1.8 Greenwashing by the Fur Industry through Voluntary Labelling – the Origin Assured Label

In 2007, the International Fur Trader Federation presented the Origin Assured Label (from safe origins) to the public. It was developed in close cooperation with the leading fur auction houses American Legend Cooperative, Finnish Fur Sales / SAGA Furs, Copenhagen Fur and North American Fur Auctions. The seal contains information regarding the species of animal that the fur came from. Furthermore, the Origin Assured seal assures that the fur came from countries with national regulations or standards for animal husbandry. These requirements are monitored by the independent certification institute COTEGNA[46]. In the participating countries, there are only a very small number of specialised fashion houses from the high-price segment that even offer furs with the Origin Assured Seal[47].

Origin Assured fails to mention that the aforementioned minimum requirements for animal husbandry are derived from the existing national requirements and legitimise the animal cruelty that is found on fur farms. This is why fox furs from the USA are able to be sold in American auction houses. In America, it is possible to keep Arctic foxes in wire cages with an area of 0.6 to 1 m² as there is no binding legislation that forbids it.

Even against the backdrop of serious abuses in Scandinavian fur farms, which were exposed by both animal protection organisations and the authorities, the value of the label for consumers is questionable. Due to the multitude of Scandinavian investigations that have been carried out in the last 3 years, it can be safely assumed that many of the farms that produce furs for Origin Assured do not adhere to the national guidelines. It is also questionable whether the Origin Assured Seal conducts any checks of fur farms. The independent certifier COTEGNA is apparently entrusted with monitoring the supply chain between retailers, wholesalers and auction houses that deal in finished furs[48].

For FOUR PAWS these facts prove a clear animal protection greenwashing of fur fashion by the Origin Assured Seal. In actual fact, Origin Assured is not connected in any way at all with standards or guidelines that will ensure the avoidance of cruelty to animals on fur farms.

[46] http://www.originassured.com/
[47] http://www.originassured.com/index.php/retailers/
[48] http://www.cotecna.co.uk/UK/en/origin-assured-label.aspx

5.2 Fur Production – Little Nature, a lot of Chemistry

Fur production is a chemical intensive process. The aim is to produce a fashionable commodity from a living organism which is resistant to decomposition. This is only possible if all biodegradable materials are removed, destroyed or preserved. This is largely achieved through the use of chemicals. These include a range of substances that are hazardous to health and the environment, particularly hazardous substances from the substance groups heavy metals, organic solvents, organochlorine pesticides, polycyclic aromatic hydrocarbons and reduced organic nitrate compounds.

In 2003, the "Integrated Pollution Prevention and Control Bureau"of the European Commission recognised tanneries as "potentially pollution-intensive industries"[49].

Information on the (current) chemicals used in fur production is limited in the available literature, however frequently the same chemicals are used in leather production. In the last years and decades, a number of very problematic substances have been replaced in the European production of leather, skins and furs. However, in emerging markets those chemicals are still being used and continue to appear in the hands of European consumers as residues in the products. That these substances still represent a serious problem can be seen by the fact that many of them are found on the study list of the "SG-Mark for leather products that have been checked for contaminants"[50].

Accurate knowledge concerning the current contaminant levels in furs is not available at the moment as furs are rarely examined. This is often not because no contaminants are expected but rather because of the high cost of obtaining samples for investigation.

Important chemicals, both for health concerns and the environment, that are used in the production of furs are described in more detail in Chapter 7.

In fur production there are two basic steps to be distinguished between: Dressing describes the processes that do not essentially change the hair, e.g. soaking, washing, tanning and oiling. These processes attempt to replace fats and proteins with preserving agents and stabilising substances. On the other hand, fur processing includes processes that change the appearance of hair (e.g. bleaching, dyeing and mechanical processes).

5.2.1 Fur-bearing Animals

For the production of furs, the skins from more than a hundred different species are used. These animals are almost solely mammals and belong to the ungulate, carnivore or rodent families. Valuable furs, e.g. sable, chinchilla, mink, raccoon dog, rabbit or fox are primarily

[49] Integrated Pollution Prevention and Control (IPPC): Reference Document on Best Available Techniques for the Tanning of Hides and Skins; European Commission, February 2003. Available from www.bvt.umweltbundesamt.de/archiv-e/bvt_lederindustrie_zf.pdf

[50] Download from a project partner PFI: www.pfi-ps.de/fileadmin/verwaltung/SG-Kriterien_05_2009_D.pdf

gained from animals held in captivity. Furs from fur farms are generally considered to be of higher quality that those from nature, as they are usually more uniform and contain fewer errors. Farms account for approximately 85% of fur production. The most durable furs come from animals that live alternately on land and water e.g. mink, otter or beaver.

The countries, in which fur skins are processed and refined on an industrial scale, are usually the same countries which have high production and consumption of such skins. Dressing and finishing is carried out over a longer period in aqueous solutions with particular chemicals. For reasons of economy and environmental protection, equipment from the manufacturing of leather has been introduced e.g. tanning drums and drum washing machines.

5.2.2 Skin and Hair

Morphologically there is essentially no difference between the skins and the furs of animals that are processed for leather and those that are used for furs. Whereas the leather skin of some fur-bearing animals is thin, like e.g. that of the chinchilla, other species like seals have a very thick leather skin. The hair of many different kinds of fur skins is very different in form and structure and is species specific. Hair is the product of the thin outer layer of the skin, the epidermis. In the manufacturing of leather, hair and the outer layer of skin are removed using liming.

5.2.3 Fur Production

Hides and pelts that are used for the manufacturing of leather and furs and even the hides of larger species, e.g. sheep, beavers, seals and those of the great cats, are almost always tanned in smooth form. In contrast, "the coat is pulled over the ears" of the smaller species: The skin is cut along the underside of the tail and along the hind legs and then the fur is removed over the body like a glove.

5.2.4 Preservation

Freshly tanned skins are rarely processed immediately, but instead are preserved in most cases. The water content of the skin is reduced in order to prevent decomposition by microorganisms. The skin is air dried in a slightly stretched state. The hair itself is resistant to microorganisms, but if the skin begins to rot, because of inadequate or negligent storage, bacterial destruction of the hair roots sets in and loosens the hair so that the entire fur becomes worthless. The process of preserving the skins with salt (also combined with drying) is only used for skins from large fur-bearing animals. Common salt is used to remove moisture from the skin which in turn inhibits decay. Preserving agents are still found in leather today like the endocrine disrupting organotin compounds (e.g. Tributyltin) or the allergenics DMF (Dimethylfumarate) or PCP (Pentachlorophenol), which are prohibited in the EU[29]. As a replacement for PCP, 2-(thiocyanomethylthio)benzothiazole (TCMBT), 4-chloro-m-cresol and ortho-phenylphenol, which is well known through its use in the treatment of citrus fruits, have been used in recent years.[29]

5.2.5 Dressing

5.2.5.1 Soaking

Soaking should bring the skins back to the state they were in immediately after skinning. It also removes dirt, blood, salt and preservatives, as well as water and salt soluble proteins. As a rule, bactericides are added to the soaking immersion baths. Common salt and tenside are also occasionally added to accelerate the soaking.

5.2.5.2 Degreasing

Dirty and very greasy skins are washed one or two times. Detergents that are commonly used are mixtures based on alkyl ether sulphates and alkyl sulphates with non-ionic alkyl (phenyl)-polyglycol ether. Furthermore, nonylphenols, nonylphenol ethoxylates (NPEOs), which today are known to have strong hormonal effects, as well as other alkylphenol ethoxylates, organic degreasing solvents and soda continue to be used. These days paraffinsulphochloride is also often used.

5.2.5.3 Mechanical cleaning

After cleaning, the subcutaneous tissue and meat and fat residues are removed from the skin. This process is done either manually or mechanically using fleshing machines. Smaller skins are shaved with a rounded knife to even out the thickness of the leather and to reduce the weight.

5.2.5.4 Pickling

Before they go through the actual tanning process, the skins are pickled. This serves several purposes: The collagen of the skin is loosened through the hydrolytic action of an acid salt to remove soluble proteins and prepare the leather for tanning. For a long time, the most common pickling acid used was sulphuric acid, but as that can damage the leather, it has been largely replaced by organic acids like sulphophthalic acid or by certain short-chain dicarboxylic acids.

5.2.5.5 Tanning

The tanning process turns the skin into leather. It strengthens the collagen and increases the shrinkage temperature. The Leipzig method is the oldest method for processing and finishing and was once very commonly used. It consists only of treating the skin with salt and sulphuric acid, followed by oiling. The water resistance and storage characteristics of the product are unsatisfactory though.

Refining the skins with aluminium salts is one of the oldest methods that is still often used today. The chemicals used are ammonium or potassium aluminium sulphate and aluminium sulphate. Solutions of these salts produce white leather which is fairly elastic, but the water resistance is low.

Free acids are formed during the tanning process and it is therefore necessary to add salt to prevent swelling of the collagen. Aluminium chlorides that are used are often stabilised with

masking agents and are offered in the market as tanning salts. The use of aluminium salts is often combined with formaldehyde or chromium salts to improve the water resistance, accelerate the process and increase the shrinkage temperature.
In contrast to treatments with aluminium salts, tanning with chromium (III) salts is irreversible. Tanning or retanning with chromium salts produces leather that has good resistance to water and heat but somewhat inferior elastic properties. The chrome method is particularly used for synthetic dyes (see Chapter 4.3). However, when the tanning method is incorrectly carried out, the chromium (III) used can end up being converted into highly poisonous chromium (VI). Chromium (VI) is still being found in leather products despite a ban on its use in the EU[51,52]. To what extent arsenic and materials containing antimony are still being used around the world is unclear.
The products used for chromium tanning of fur skins are the same as those used for the tanning of leather. How much chromium tanning agent is used depends on the specific fur skin, the treatment that it has already received and the desired shrinkage temperature.

5.2.5.6 Oils and fats

The purpose of oiling or greasing is to make the leather of the fur skin soft and supple. During this process, the fibres of the skin are covered with grease to prevent them from sticking during drying. The greasing with oil is done emulsified in water. In most cases, the raw materials for this process are mostly liquid derivatives of animal and vegetable oils as well as synthetic products (highly molar chlorinated hydrocarbons like the environmentally hazardous chlorinated paraffins). Natural oils are partially sulphated or sulphonated synthetic oils through partial chlorosulphonation with subsequent hydrolysis which thus makes them able to be emulsified in water. In many cases, medium viscosity mineral oils are added.

5.2.5.7 Degreasing in organic solvents

Degreasing removes fat particles and soluble substances from the hair and the leather so that the weight of the furs is reduced and the dyeing properties are improved. The usual method is the treatment of dry skins, dyed or undyed, with solvents like the neurotoxic and potentially carcinogenic perchloroethylene or with the environmentally hazardous perfluorooctanoic acid, PFOA.

5.2.6 Finishing

5.2.6.1 Bleaching

Reductive bleaching: The furs are treated with sulphites, bisulphites or, in most cases, with dithionite during or after washing. For a strong effect, the reductive bleaching can be carried out as an oxidative bleaching with hydrogen peroxide.

[51] Annual report of the Chemical and Veterinary Investigation Office (CVUA) Freiburg
[52] „Chromium (VI) in leather content commodities with body contact"; Federal Ministry for Nutrition, Environmental and consumer protection under www.aktionsplan-allergien.de

Oxidative bleaching: Real bleaching, in the sense of intensive destruction of the natural pigments found in the hair, is achieved through oxidative bleaching with peroxides, e.g. with hydrogen peroxide or persulphate, catalysed with iron (II) salts. This method, or one of its numerous variations, is for bleaching hair for naturally dark skin, e.g. black karakul or muskrat, so that it can be subsequently dyed in fashionable dyes. For catalytic bleaching, the furs must be in perfect condition and cannot have been subjected to chromium tanning. Catalytic bleaching is a process that is very difficult to control and must be monitored carefully; reductive bleaching often has to be carried out afterwards to remove the iron salts. After bleaching the furs are retanned and are greased or oiled again in most cases.

5.2.6.2 Dyeing

Although many types of fur, especially valuable furs, are processed without dyeing, the proportion of skins that are being dyed has been increasing in recent years (e.g. for sheep skin products for decoration, automobile seat covers and clothing). Dyeing is used for refining "cheap" types of fur or for the unification of precious furs, e.g. Persians. There are many variations in the dyeing process; the method used depends on the type of fur. There are dyeing processes that beautify, intensify, cause blueing, colour the tips of the hair or create stripes in the fur. The hair must be treated before it is dyed. It is first "killed" with ammonia, soda, or (more rarely) with a caustic soda solution in combination with wetting agents or detergents. Before dyeing with oxidation dyes, the furs are treated with metal salt solutions, usually potassium dichromate, iron (II) sulphate, or (rarely) copper (II) sulphate or with a mixture of these products. It is possible to also use the neurotoxic chemical, lead acetate. This substance converts the colour pigments into paints and thereby contributes to improvements in their authenticity and depth. The pH value of the dye solution is reached with various organic acids.

Vegetable dyes: the oldest method for dyeing fur skins is the treatment of the furs with extracts from woods or sumac leaves. This method is seldom used these days; it is almost solely limited to the black colouring of the karakul with logwood and iron or copper salts.
Oxidation dyes: These dyes were put on the market at the end of the nineteenth century and are still frequently used. Examples are the toxic and environmentally hazardous 1.4-phenylenediamine, the eye irritant pyrocatechol, the environmentally hazardous resorcin, and the harmful aminophenols and derivatives of naphthalene, a polycyclic aromatic hydrocarbon.
The dye is used with about the same amount of hydrogen peroxide. Since the various baths and rinses remove a large amount of the tanning and greasing agents from the fur, most of the furs are retanned and oiled or greased again after dyeing. Many oxidation dyes are allergenic.
Synthetic dyes: the large number of synthetic dyes, together with the use of new technologies for dyeing the hair of furs, has made it possible to obtain furs in fashionable colours. Synthetic dyes are only absorbed by the material at an elevated temperature – for this reason the furs most have undergone chromium tanning. A stain is not necessary.

Dispersion dyes have been used for a long time, like the carcinogenic azo and anthraquinone dyes or metal complex dyes, which are used for dark colours with the aid of carriers (chlorobenzenes or ester of phosphoric acid).
From the anionic dyes, nitro, monoazo and anthraquinone dyes are used. As the treatments in the baths can damage the hair on the furs, it is customary to add fibre protection agents based on protein degradation products which shortens the treatment. After dyeing the furs are washed and dried again and if necessary retanned and greased. To protect against moths, the furs are treated with pesticides, like e.g. the suspected carcinogen naphthalene (a polycyclic aromatic hydrocarbon, PAH) or, a long time ago, with the very environmentally persistent chlorophenylid (trade name EULANEST® from Bayer).

5.2.6.3 Purification

Now the dye and grease is removed. To do this, the furs are rotated in drums for several hours, first moist, then with sawdust, which in the past had been mixed with the liver and kidney damaging carbon tetrachloride or the neurotoxin tetrachloroethelyne. This may still be being done today in some of the production countries. The rotation in the drums increases the softness of the leather and the gloss of the fur. Following this treatment there are further mechanical treatments like shearing, ironing, beating, combing and sorting. Wet ironing solutions with formaldehyde, alcohol and acid are used when ironing imitation furs.

5.2.6.4 Conservation

To protect the end product during transportation, storage, trade and ultimately the consumer against mould, fungus, insects such as moths and other degradation factors, the furs are often conserved. Pesticides, biocides and preserving agents are used for this (s. 2.3).

6 Statutory and Private Standards for Hazardous Materials and Contaminants

This chapter presents important statutory and private standards are presented that include limits and benchmarks for leather and textile products. As there are no specific standards for fur products, the regulations for these closely related product groups are used in this report. As a matter of principle, it is necessary for industry and governmental institutions to create regulations and standards that clearly include fur products. Only then, and with better in-house and independent monitoring of company produced and marketed goods, would it be possible to expect an improvement in the chemical and hazardous substance contamination of fur products.

6.1.1 Industrial and private standards

6.1.1.1 SG Leather, SG schadstoffgeprüft (Inspected for hazardous substances)

SG – The symbol for leather products (Germany) that have been inspected for hazardous substances was launched by TÜV Rheinland and Institut Fresenius (currently version 05/2011). It sets the requirements for low levels of hazardous substances in leather products so that they pose no health risks. Materials, additives and the manufacturing processes are tested. In order to use this symbol, companies must allow regular audits to be carried out. Particular testing procedures are prescribed.

Five product share groups are distinguished, those of: Leather and furs; Textiles; Leather fibres; Cardboard, paper, wood cork and cellulose; and Adhesives.

The following requirements, among others, apply to leather and fur:

- The smell may have a maximum level of 3 (clear). The products must be resistant to rubbing.
- Formaldehyde: 20 mg/kg (children's goods), 75 mg/kg skin contact, 150 mg/kg without skin contact
- PCP: 0.5 mg/kg
- Total chlorinated phenols: 1mg/kg
- Pesticides: 1 mg/kg
- Tributyltin: 0.025 mg/kg
- Dybutyltin compounds, Monobutyltin compounds: 1 mg/kg each
- Chlorinated paraffins: may not be used
- Nonylphenol and nonylphenol ethoxylates (in accordance with the German Chemicals Prohibition Ordinance): 0.01% per proven concentration
- Dimethylfumarate: 0.1 mg/kg

SCHADSTOFFGEPRÜFT[53] Products: Leather goods, leather products, leather garments, shoes

Award criteria

[53] Source: http://www.label-online.de/label-datenbank?label=121

SG labelled leather goods are leather products that have been tested for harmful substances and which are not hazardous according to current information. The testing criteria include, among others: undetectable levels of dyes that contain carcinogenic amines, carcinogenic and allergenic dyes, chromium VI compounds, limits for certain substances (e.g. formaldehyde, chlorinated phenols, pesticides, soluble mineral tannins), limits for various soluble heavy metals (e.g. copper, nickel, lead), smell test (not allowed: annoying or unbearable odours), colour fastness and rubbing resistance.
The criteria vary depending on the material component (e.g. adhesives, components made of leather and fur, textiles, leather fibre materials or cardboard and wood), for metallic accessories separate criteria are used. Articles for toddlers have to meet particularly stringent requirements.

Award procedures
The SG test criteria catalogue was developed in cooperation with experts from TÜV Rheinland Produkt und Umwelt GmbH, the Instituts Fresenius GmbH and the Testing and Research Institute Pirmasens. Verification of compliance with the criteria as well as the awarding of the symbol is also carried out by one of these three institutes. The finished products and materials that carry the SG symbol are regularly inspected each year through random sampling.

Evaluation
The SG symbol documents that the labelled leather products comply with specific contaminant limits. The focus is on health. The requirements for the limits usually go beyond statutory standard. That is why e.g. the limit for formaldehyde is far below the declaration limit for cosmetic products. Ecological aspects are not considered. The criteria are only concerned with the finished product; requirements in the production process through the textile chain are not provided.
The contaminant tests are carried out by independent institutions to ensure the independence of the award procedure. The criteria have been developed in cooperation with various institutions.
The criteria and procedures are appropriately documented and make the background of the symbol transparent.
The SG symbol can give consumers a guide to contaminant reduced products. A meaningful textile label should not only take the certification process into account but also ecological and social standards, especially with regard to the production processes.

Note
Limited recommendability

Contact http://pfi-germany.de/fileadmin/user_upload/media/SG-Kriterien_05_2011_D.PDF
TÜV Rheinland Produkt und Umwelt GmbH
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6.1.1.2 Global Organic Textile Standard GOTS

This standard was launched by 15 organisations in 2008, mainly from the biotextile branch, and developed in cooperation with experts. Version 3.0. GOTS has been valid since 1.3.2011. It deals with textiles that are made of 70% organic fibres and largely complies with the BEST benchmarks of the International Association of the Natural Textile Industry. The standard for leather is the IVN Natural Leather standard.
The certification covers the manufacturing and the final product. Up to now, not all wholesalers, manufacturers and importers are participating in the system. Especially small companies shy away from the high costs.
GOTS works with a positive list (Positive List System), which can be requested from the Institute for Market Ecology (IMO). In addition there is an exclusion list for toxic substances, a list of requirements for the evaluation of "hazards and toxicity" and a list of approved residues with limit criteria.
Prohibitions include:

- Aromatic solvents
- Chlorophenols (like TeCP,PCP)
- Complexing agents/Surficial agents (all APEOs and their polymers, EDTA,DTPA,NTA,LAS, alpha-MES)
- Fluorocarbons (like PFOS, PFOA)
- Formaldehyde and other short-chain aldehydes
- Halogenated solvents
- Heavy metals (with exceptions 2.4.6)
- Nanoparticles from 1-100 nm
- Halogenated substances (AOX max. 1%)
- Organic substances (like DTB, MBT, TBT, DOT, TPhT)
- Quarternary ammonium compounds (especially DTDMAC, DSDMAC, DHTDMAC)
- Plastification agents (PAH, Phthalate, bisphenol A, and all other substances with endocrine effects)
- All substances that are internationally or nationally prohibited in the manufacturing of textiles
- Substances that are restricted in textile manufacturing through national or international ordinances (EC 552/2009, EC 1907, 2006 REACH XVII and by the candidate lists SVHC of the ECHA)
- New since the last changes:
- No detergents containing phosphates
- No allergenic emulsion paints
- All bleaches that are not hydrogen based
- Materials from endangered species

Limits (measured in the eluate during the wash test) exist (among others):

- Arylamines (carcinogenic, amine releasing azo dyes MACIII Categ.1,2,3) <20mg/kg
- AOX < 5.0 mg/kg
- Emulsion paints (carcinogenic, allergenic) < 30 mg/kg
- Formaldehyde < 16mg/kg
- Glyoxal and other short-chain aldehydes < 20 mg/kg
- pH 4.5 – 7.5 in contact with skin
- Chlorophenols (PCP, TeCP) < 0.01 mg/kg
- Phenylphenols < 1.0 mg/kg
- Pesticides (total) < 0.5. mg/kg
- Heavy metals:
- As < 0.2 mg/kg
- Cd < 0.1 mg/kg
- Cr < 1.0 mg/kg
- Cr IV < 0.5 mg/kg
- Co < 1.0 mg/kg
- Pb < 0.2 mg/kg
- Ni < 1.0 mg/kg
- Hg < 0,02 mg/kg
- Se < 0,2 mg/kg
- Sn < 2.0 mg/kg

- During maceration:
- Cd < 45 mg/kg
- Pb <50 mg/kg
- Ni (release) < 0.5 müg/cm²/week
- TBT, TphT, DBT, DOT each < 0.5 mg/kg
- MBT < 0.1 mg/kg
- Phthalates (DINP, DNOP, DEHP, DIDP, BBP, DBP, DIBP) in total < 100 mg/kg
- Polycyclic Aromatic Hydrocarbons (PAH), chrysene, benzanthracene, benzofluoranthene, benzopyrene, dibenzo anthracene, naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, indenol (1,2,3-cd)pyrene, benzoperylene
- In total < 10 mg/kg
- Individually < 1 mg/kg

[54]

Products: Clothing, textiles

Award criteria

The textile seal Global Organic Textile Standard (GOTS) was developed by the International Association of the Natural Textile Industry (IVN) (Germany) together with the Soil Association (SA) (England), the Organic Trade Association (OTA) (USA) and the Japanese Organic Cotton Association (JOCA) (Japan). The quality criteria of the seal comply with the label for IVN certified natural textiles. This means that for clothing made of natural fibres (e.g. cotton, linen, silk) that the use of hazardous chemicals in the processing of the fibres and finishing of the textiles was abstained from in production and throughout the entire production chain. At all stages in the processing chain, separation of organic and conventional fibres was ensured and the organic fibres were not contaminated. Only dyes and additives are chosen that have had their toxicological and environmental effects assessed and been deemed safe. Bleaching is only done in exceptional cases and if so, it is not done with chlorine-containing chemicals but with oxygen. Equipment is primarily based on mechanical, thermal and physical means and not chemical means.

The aim of GOTS is to define a controlled standard for textiles, based on environmentally and socially responsible criteria, which assesses the entire life of the product from the manufacturing of the output fibres to the finished product.

There are two variants of GOTS:

Variant 1: "organic" (bio) or "organic – in conversion". The textile must be made of at least 95 percent certified natural fibres from organic cultivation or conversion to organic cultivation; a maximum of 5 percent of the fibres may come from conventionally grown fibres or synthetic fibres.

Variant 2: "from X percent organically grown" or "from X percent conversion to organically grown": Here, at least 70 to 95 percent of the fibres included in the textile must come from certified organic cultivation or from cultivation in conversion to organic farming; a maximum of 30 percent of the textile may come from conventionally grown fibres or synthetic fibres; the proportion of synthetic fibres my not exceed ten percent (exception: for socks, leggings and "Sportswear" a proportion of synthetic fibres up to a maximum of 25 percent may be reached).

In each case, at least 70 percent of the fibres must be organically grown (or in conversion to organic farming). Above all, how the fibres may be further processed and which substances may be used is exactly regulated. This ensures that any contamination of the finished product is kept as low as possible. Minimum social standards are part of the GOTS standards and are verified.

Award procedures

[54] Source: http://www.label-online.de/label-datenbank?label=551

To receive the GOTS seal all fibres and yarns used must have valid certification from a recognised certification institution according to ecological criteria.
Companies must present a written concept concerning corporate environmental management. This concept must include naming the person with the overall responsibility for the implementation and strategies for the reduction of waste as well as an appropriate system for checking the performance (monitoring), an action plan in case of accidents, an appropriate qualification and training concept, reasonable and minimal use of chemicals and their proper disposal.
Companies must also present a corporate strategy for social responsibility with the following social standards, which are partially based on the conventions of the International Labour Organisation (ILO):
Prohibition of forced labour,
Freedom of assembly and the right to collective bargaining,
Health and safety at work and with regard to the working conditions,
Prohibition of child labour,
Wages for regular working hours, overtime and overtime compensation must conform to statutory minimum wages or industrial standards must be met or exceeded,
Working hours must comply with the applicable national laws and industrial standards regarding working hours. The maximum weekly working hours in accordance with national legislation apply, but 48 hours per week may not be regularly exceeded. Overtime may not exceed 12 hours per week.
All discrimination based on gender, age, religion, race, caste, social background, disability, ethnic or national origin, nationality, membership in employee organisations, including unions, political affiliation, sexual orientation or other personal characteristics is prohibited in the hiring, remuneration, access to training, promotion, termination of employment or retirement.
The processing operations from the fibre preparation to the garment making and final packing as well as importers and exporters must undergo an annual inspection cycle including possible unannounced inspections and must also exhibit a valid operating certificate.

Evaluation
The Global Organic Textile Standard (GOTS) seal of approval is based on ecological and social aspects. The criteria go beyond the legal requirements and take the production processes from raw materials through processing to the working conditions and storage into account. Compliance with these criteria is checked upon application by a neutral body. The use of the symbol is temporary, unannounced inspections are held at random periods and violations are prosecuted. Award criteria and procedures are accessible by everyone.

Note:
Recommendable

Contact

http://pfi-germany.de/fileadmin/user_upload/media/SG-Kriterien_05_2011_D.PDF
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www.naturtextil.com

6.1.1.3 IVN- International Association of the Natural Textile Industry e.V.

This organisation was founded in 1989 and has approximately 70 from the textile production and trading. Since 2000, the IVN has awarded the quality seals NATURTEXTIL, NATURLEDER and finally the stringent BEST seal.
The intention of the association is not only based on textiles being free of poisons, but also on their environmentally friendly production, low carbon dioxide emissions, the welfare of

animals and people in the production process, saving resources, etc. Only organic products or those that come from organic cultivation are used.
BEST refers to the EU Directive EU 67/548 EWG (currently in the ninth version). This directive is used for the classification, packaging and labelling of dangerous substances. The list contains approx. 1200 substances which are classified by element atomic number (based on the active atom in the molecule). These include AOX and metal-halogen compounds, many other heavy metal compounds, plasticisers, inorganic and organic acids and their salts and esters, many solvents and various boron compounds.

NATURLEDER Seal: This comprises the process from the acquisition of raw materials to the finished leather. An emphasis is placed on the waste water generated in the production. Each production, e.g. requires a separate, two stage sewage treatment plant. IVN provides certification for the companies. All chemicals used in the process must be registered and licensed. On the whole, similar rules as for IVN textiles apply (see above). The skins of animals should only come from agricultural production. All materials used must be biodegradable. Chromium tanning is prohibited, but aluminium, zirconium and titanium are approved. Halogenated and heavy metal compounds are forbidden in the dyeing process. If possible, mechanical processes must be preferred to chemical processes in every production step.

IVN certified NATURTEXTIL

[55]

Products: Garments made out of natural fibres (e.g. cotton, linen, silk)

Award criteria
The quality seal IVN certified NATURTEXTIL features textiles made out of natural fibres, which were produced according to high environmentally sound and socially acceptable standards. The criteria include, among others:
Cotton from certified organic farming and the conversion of other fibres from conventional agriculture but with pesticide residue testing,
Prohibition of environmentally damaging processing methods and equipment (e.g. ammonia treatment, chlorination of wool, optical brighteners, antistatic agents, perfuming),
Prohibition of particular substances (e.g. formaldehyde, classified as a carcinogenic dye, heavy metal free toxicologically safe natural dyes or synthetic dyes with AOX content > 10%, metal complex colours except for silk),
Accessories (e.g. the use of natural, renewable raw materials, but no endangered woods, metals used for buckles etc. must be free of chromium and nickel., water-based paints or paints based on natural paints and oils),
Certified and conventional products are stored separately,
Social standards (e.g. prohibition of forced labour, discrimination, child labour, observation of regular working hours).
Products that meet the higher standards can aspire to the IVN certified NATURTEXTIL BEST seal.

[55] Source: http://www.label-online.de/label-datenbank?label=500

Award procedures
The issuer of the IVN certified NATURTEXTIL is the International Association of the Natural Textile Industry (IVN), an association of natural textile manufacturers which, together with the IMO Institute for Market Ecology and the eco-Environmental Institute, is responsible for policy development and the awarding of the quality seal.
Interested producers are tested by an independent institute following their application to the IVN. This includes an audit, in which e.g. the compliance with the incoming and outgoing goods as well as the social standards is checked. A positive result allows the manufacturer to receive a temporary certification for one year.

Evaluation
IVN certified NATURTEXTIL BEST is based on ambitious environmental and social aspects. The criteria go far beyond the statutory requirements and take the production process from the acquisition of raw materials through the processing to the working conditions and storage into account. The adherence to these criteria is tested by a neutral body upon application for the seal. The use of the seal is temporary, unannounced inspections are held at irregular intervals, violations are prosecuted. Award criteria and procedures are accessible by everyone.

Note:
Recommendable

Contact

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6.1.1.4 Öko-Tex - Oeko-Tex® Standard 100

The Oeko-Tex Standard includes a testing and certification system. It was founded in 1992 by the Austrian textile research institute ÖTI and the German research institute Hohenstein. Basically, tests for hazardous substances are carried out and evaluated according to limits and other criteria. Production, ecology, human ecology and disposal ecology are examined. The seal is awarded for one year and may be renewed upon application and verification.

There are different limits for four product categories: baby textiles, textiles with skin contact, textiles without skin contact, and decorative and furnishing materials. The second category is especially of interest when considering fur apparel.

The hazardous substance test is based on four basic criteria of forbidden substance groups:

- Legally banned substances like carcinogenic dyes
- Legally regulated substances like formaldehyde, plasticisers, heavy metals or pentachlorophenol
- Substances that are hazardous to heath according to the current level of knowledge but not yet regulated, which includes many pesticides, allergenic dyes or some organic tin compounds
- Parameters like colour fastness and skin-friendly pH values, which serve to protect the health of the consumer

The threshold list includes about 80 substances or sum parameters. There is an extra list with approx. a further 200 individual substances, in which each substances is named with the sum of the parameters allocated to it. Here is a selection from the first group:

	Class 1 (Baby)	Class 2 (Skin contact)
mg/kg		
Formaldehyde	not detectable	75
Chromium	1.0	2.0
Cr VI	not detectable	not detectable
Pentachlorophenol	0.05	0.5
Tetrachlorophenol	0.05	0.5
Phthalates	below detection limit	0.1 total
Arylamines	none	none
Short-chain paraffins	0.1	0.1
PAH	10.0	10.0
Bioactive products	none	none
Vinyl chloride	0.002	0.002

Special emphasis is also placed on washing fastness, rubbing resistance, perspiration (acidic and alkaline) resistance and saliva resistance.

[56]

Products: Baby products, clothing (e.g. underwear, outerwear), home and household textiles (e.g. curtains, mattresses, bedding, towels), technical textiles and respective accessories

Award criteria

The seal "Confidence in Textiles – tested for hazardous substances according to Oeko-Tex® Standard 100" identifies textiles tested for harmful substances. Essential requirements are:
Limits for harmful substances (e.g. formaldehyde, pesticides in natural fibres, organic tin compounds),
Exclusion of certain dyes (e.g. carcinogenic or allergenic classified dyes or dyes with separable arylamines),
The use of biologically active or flame retardant products only if accepted by Oeko-Tex,
Minimum 3 or 4 (of a max. 5) points when testing for saliva, sweat and friction resistance and water-fastness,
Smell test,
Emission limit values of certain volatile components (e.g. aromatic hydrocarbons) (not for all products, but e.g. mattresses),
Operational quality assurance.
The individual requirements are based on four product categories related to the intensity of skin contact during proper product use. For example, the requirements for underwear are more stringent than those for overcoats.

Award procedures

The Oeko-Tex® Standard is published and developed by the International Association for Research and Testing in the Field of Textile Ecology (Oeko-Tex®), a coalition of 14 textile and testing institutions in Europe and Japan.
It is awarded upon application for textile and leather products with their textile and non-textile components at all production stages. The solicited Oeko-Tex® Institute checks representative sample materials. Should the test results be positive, the manufacturer receives temporary certification valid for one year, as long as it is confirmed by the declaration of all the products with the sample and there is demonstrable quality assurance. Annual random product inspections take place for at least 15 percent of all of the certificates issued; two independent auditors also perform unannounced site visits.

Evaluation

The Oeko-Tex® Standard 100 is based on health standards that go beyond the statutory requirements and tests for hazardous substances in all stages of processing. The fulfilment of the criteria is tested by independent institutes according to defined procedures. Violators are prosecuted and are sanctioned through the removal of the quality seal as appropriate. The independence of the seal is guaranteed. Award criteria and procedures are accessible by everyone.

Note

Limited recommendability

Contact

http://www.oeko-tex.com/xdesk/ximages/470/16459_100def.pdf
Hohenstein Textile Testing Institute GmbH & Co. KG
Schloss Hohenstein
74357 Bönnigheim
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info@hohenstein.de
www.hohenstein.de

[56] Source: http://www.label-online.de/label-datenbank?label=165

6.1.1.4.1 Oeko-Tex Standard 1000 (Textile Industry)

The Oeko-Tex Standard 1000[57] is a testing, auditing and certification system for environmentally friendly production sites in the textile industry. The Öko-Tex Standards 1000 system includes the examination of the environmental performance of textile establishments as well as the examination and certification of the environmentally sustainable production of textile products.
The Standard is awarded by the Oeko-Tex Institute based on independent inspections. It is required to make an objective assessment of the degree of environmental protection achieved at the production site of a company. To receive the certification according to the Oeko -Tex Standard 1000, companies must meet specified criteria relating to sustainable manufacturing processes and provide certified evidence that at least 30 percent of the total production is already certified in accordance with Oeko-Tex Standard 100.
The Oeko-Tex Standard 1000 is available worldwide. It does not describe a process for the implementation of an environmental management system, but rather formulates criteria and limits for the testing and auditing of textiles, clothing and suppliers.
The standard complements the human ecological investigation of textiles according to the Oeko-Tex Standard 100 to get a production oriented evaluation.
In addition to the certification of business premises, product groups can also be certified according to Oeko-Tex 1000. The test applies to all links in the textile chain that are involved in the production of the textile end product.
The Oeko-Tex 1000 operating facility label may be awarded to an establishment that meets the following conditions:
Introduction of a recognised quality assurance system, like e.g. ISO 9000
Carry out an initial environmental examination
On the basis of the initial examination, detailed environmental aims and plans must be derived and defined. Furthermore, steps to implement an environmental management system must be pursued
The statutory requirements of the operating site must be observed
At least 30 percent of the production is certified according to Oeko-Tex Standard 100
The use of environmentally harmful and hazardous chemicals is forbidden on the basis of specified provisions in the Standard
Regarding occupational safety and social responsibility in the operation, the legal regulations must be complied with; the social criteria are based on the Code of the International Labour Organisation (ILO)
The award procedure (Audit) includes:
Review of the documents to check that the technical and organisational requirements for the standard are being checked
Company visit
Examination of the products
Tests, if there are no documents for certain criteria
Audit report
A follow-up audit if remedial measures for improvement had to be taken
If an already established and recognised environmental management system has already been implemented, such as ISO 14000 or EMAS, then it is recognised as part of Eco-Tex 1000 in full.
The company presents an environmental report to the auditor, in which both the reached and unreached activities are documented. Then a so-called compliance audit is conducted. The audit is repeated annually. Random checks are carried out. The award of the seal is limited to three years. Failure to comply with the rules or lack of reporting may lead to the seal being removed. The results may be published.

Contact

[57] Source: http://www.label-online.de/managementstandards/managementstandards-auf-wwwlabel-onlinede/einzelbranchen/oeko-tex-standard-1000-textilindustrie

International Association for Research and Testing in the Field of Textile Ecology (Oeko-Tex)
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6.1.1.5 COTANCE

COTANCE – Confederation of National Association of Tanners and Dressers of the European Community – is an umbrella organization representing several hundred factories belonging to European tanneries and leather manufacturers. Based in Brussels, it is also a lobby group and the organ of self commitment of the member companies. It awards no seal but has a logo and is also represented by the "brand" Euroleather. According to information from COTANCE, the European leather industry employs over 50,000 people, has more than 3,000 companies and more than €8 billion in revenue. It criticises leather imports from overseas, which partially violate the statutory guidelines azo dyes, PCP, formaldehyde and chromium IV. The association claims to have lowered contaminants in member companies' waste water by more than 50% between 2003 and 2008.
It was not possible to determine what COTANCES own clearly defined policy values were towards chemical residues in leather and fur products.

6.1.2 EU

6.1.2.1 RAPEX – Rapid Exchange of Information System of the EU

RAPEX is a rapid alert system for consumer protection in the EU. RAPEX is used to exchange information from member countries about hazardous or potentially hazardous consumer goods (except for food, medicines and medical hardware). The basis for the creation of RAPEX is the Product Safety Directive 2001/95/EG (RaPS), which came into force on 15. 01.2004. In the weekly RAPEX reports products are named that an authority within the EU has classified as a concern. The relevant law enforcement authorities are automatically informed by RAPEX and enforcement is requested. The reported product groups usually deal with toys, clothes, shoes, cosmetics, jewellery and electrical appliances. Weekly notifications from the previous two years, i.e. from the mid-2009 to mid-2011 were evaluated by EcoAid[58]: notifications regarding fur products were however seldom. Chemicals that are banned in the corresponding products or which are above the limits are also considered in the notifications. Particularly common reasons for alerts are, among others, toxic or hazardous materials. The products that have been incriminated most frequently come from China and Southeast Asia, India, Bangladesh and Pakistan.

6.1.2.2 REACH

Regulation (EG) 1907/2006 (REACH), last updated on 14.04.2011. The EU chemicals regulation entered into force on 1 June 2006. REACH stands for Registration, Evaluation and

[58] http://ec.europa.eu/consumers/dyna/rapex

Allowing CHemicals. The aim is to improve the protection of human health and the environment.
Various lists from REACH deal with risky materials: Among these are the candidates list, Annex XIV (08.07.2011 with 65 substances), the working list and the list of registered toxic substances (4263 substances). Substances with certain hazardous properties are subject to an approval process. The EU Commission can allow, if necessary, restricted approval with the nature of a prohibition.
Article 33 of REACH regulates the obligation to inform the consumers. Consumers must be informed upon request, if so-called SVHCs (see below) constitute more than 0.1% of the proportion of the weight of a product.

SVHC: Substances of Very High Concern
These SVHCs are published by the ECHA, European Chemicals Agency. The candidate list is able to be downloaded under www.reach-clp-helpdesk.de. The materials are checked to see whether they are required to be registered under REACH. Article 57 of the REACH Regulation 1907/2006 EC sets the criteria for SVHCs:

- carcinogenic
- mutagenic
- toxic to reproductive processes
- persistent, bio-accumulative and toxic according to REACH Annex XIII (PBT substances)
- very persistent and very bio-accumulative according to REACH Annex XIII (vPvB, PBT)
- there is scientific proof of probable serious effects to human health or the environment

The comprehensive criteria with definitions and inspection instructions are published in the Official Journal of the EU Regulation 465/2008, Annex XIII.
http://echa.europa.eu/home_de.asp
http://echa.europa.eu/chem_data
Several of the chemicals examined in the scope of this report are SVHCs.

6.1.2.3 GHS – Global Harmonized System of Classification and Labelling of Chemicals

This system was installed in 2003 under the auspices of the United Nations. The aim of the GHS is the harmonisation of the classification and labelling systems currently existing in the world from different sectors such as transport, consumer, labour and environmental protection. GHS sets standards for the evaluation of the intrinsic properties of chemicals (classification) and creates a common basis for communicating these properties via product labelling and material safety data sheets. In Europe, GHS should replace Directive 67/548/EEC (Dangerous Substances Directive) and 1999/45/EK (Preparations Directive). The R-statements currently used in the EU will change to H-statements (Hazard statements). The S-statements will change to P-statements (Precautionary statements). Substances in Europe must be labelled according to the GHS from 01. 12. 2011, mixtures from 2015. The

future GHS Regulation of the EU can be seen under www.umweltschutz-bw.de under the keyword "hazardous substance list" or under http://ec.europa.eu/.../how-does-clp-work

6.1.2.4 Toy Safety Directive

The EU Toy Safety Directive (2009/48/EC) complements Directive 2001/95/EC for general product safety. The Toy Safety Directive refers to the physical-mechanical characteristics of toys, the flammability, the chemical properties, the electronic properties, hygiene and radioactivity. The CE labelling on toys is also covered by this Directive. The market surveillance authorities of the member states are the relevant law enforcement authorities. The Directive puts an emphasis on CMR substances (carcinogenic, mutagenic, toxic to reproductive processes). Toys that an infant (<36 months) can place in its mouth are hereby prioritised. The chemical substances are dealt with in Directive Annex III. There is an exclusion list of 55 fragrances, a limit list of 11 fragrances as well as a migration threshold list for 19 chemical substances.

The exclusion list includes, among others:

- Diphenylamine
- Benzyl alcohol
- Various PAHs (Polyaromatic hydrocarbons)
- Various natural substances like cumarin or geraniol

The limit list includes, among others:

- Various natural substances like citronella oil and its chemical variations as acids, salts, alcohols or aldehydes

The migration list includes (including the extraction method for the base material for analysis - e.g. abrasion, extraction ...):

- All 19 substances are heavy metals, especially boron, chromium III and VI, as well as organotin compounds

The substances from the three lists all bear CAS numbers.
http://ec.europa.eu/.../toys/.../directives/index-en.htm

6.1.2.5 Water Framework Directive

Water Framework Directive of the EU, Directive 2000/60/EC

In accordance with the Directive, the aim is to achieve good conditions for surface water and ground water. In particular, the catchment areas of major European rivers are considered. These extend beyond national boundaries and also apply to the ground water areas between the watersheds. With regard to potential contamination, a distinction is made between point sources, e.g. industrial discharges, sewage plants, etc., and diffuse sources (e.g. agriculture, consumer products). The sewage treatment must always be updated to the best available technology. The aim is to improve the quality of water courses by ensuring that progressively fewer and fewer pollutants are entered into them. There is a so-called deterioration prohibition. With regard to water pollution, Directives 91/271/ECC (Municipal Waste Water Treatment Directive) Articles 15 and 17 as well as 2008/1/EC Articles 6 – 15, which relates to industrial emissions (Integrated Pollution Prevention Control), also

apply. In Annex I, 6.2. facilities for the washing, bleaching, mercerizing and dyeing of textile are addressed, in 6.3. facilities for the tanning of hides and skin are mentioned. In Annex III, substances and substance groups which are used for the determination of emission limit values for air and water are listed. These range from all of the CMR substances, through dust, halogen compounds, various metal compounds, pesticides, etc. to oxygen reducing substances (COD/BOD). In the Water Framework Directive itself, the relevant materials are listed in Appendix VIII, as the so-called "Non-exhaustive List":

- Organohalogen compounds and substances which may form such compounds in water
- Organic phosphorous compounds
- Organic tin compounds
- Substances, preparations and their waste products with carcinogenic or mutagenic properties, or those with steroidogenic, negative effects on the thyroid or reproductive system or those that effect the endocrine system
- Persistent hydrocarbons and persistent, bio-accumulative organic toxins
- Cyanides
- Metals and metal compounds
- Arsenic and arsenic compounds
- Biocides and pesticides
- Suspended particles
- Substances that contribute to eutrophication, especially nitrates and phosphates
- Substances with lasting negative effects on the oxygen balance (measured based on parameters like COD, BOD, etc.)

http://ec.europa.eu/.../water/index_en.htm

As this report is primarily focused on the potential effect of chemicals in fur products on consumers, the WFD plays only a minor role.

6.1.2.6 European Ecolabel for Footwear

59

Product Shoes
Award criteria
The European Ecolabel denotes shoes that have environmentally friendly manufacturing and do not contain any hazardous substances. The criteria the following areas into account, among others:
Residues in the finished product (prohibition of chromium, arsenic and lead residues in leather products),
Limits for formaldehyde (e.g. in textile products under the detection limit),
Limit for water use in the tanning of skins and furs,
Emissions during manufacturing (e.g. treatment of the tannery waste water, limits for chromium in the tannery water, limited total consumption of volatile organic compounds),
Use of harmful substances (e.g. prohibition of penta and tetrachlorophenol and certain azo dyes, nitrosamine content below the detection limit),
Only using recycled PVC for the outer soles,
No installation of electrical components,
Packaging (cardboard box made of at least 100% plastic bags to 75% from recycled material),
Shelf life (e.g. in terms of wear patterns of the outer sole),
Consumer information (e.g. shoe repair instead of new purchase).

[59] Source: http://www.label-online.de/label-datenbank?label=392

Award procedures
The issuer of the European Ecolabel is the European Commission, the criteria for which are developed by the Committee for the EU Ecolabel (AEUUZ). In the committee are representatives from the member states that are responsible for the Ecolabel; environmental, consumer and industrial associations; unions; retailers and small and medium enterprises. If the Member States and the European Commission accept the criteria for a product group that are proposed by the AEUUZ, they are then published in the Official Journal of the EU. After two to five year, they are revised and strengthened depending on the technological level.
Manufacturers and importers may request the use of the label from the responsible national authorities, who will then check the application and award the use of the label. The European Commission publishes the issuing of the labels.

Evaluation
The European Ecolabel for Shoes is based on ecological, health and quality oriented aspects that go beyond the statutory requirements. It takes, among others, the end product, the treatment of the tannery waste water and the packaging into account. Applications are checked by an independent institution as to whether the criteria have been complied with, further inspections could follow unannounced. The use of the label is temporary. Following the expiration of the contract, re-application is required if the relevant criteria have been changed, otherwise the contract is extended. Award criteria and procedures are accessible by everyone.

Note
Recommendable

Responsible Party to the European Commission:
Ecolabel Helpdesk
c/o BIO Intelligence Service S.A.S.
20-22 Villa Deshayes
75014 Paris
France
Tel: +33(0)1-53 90 11 80
ecolabel@biois.com
http://ec.europa.eu/environment/ecolabel (English)
In Germany: Federal Environmental Agency
FG III 1.3
Postfach 1406
06813 Dessau
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6.1.3 National Statutory Standards

6.1.3.1 Austria

Austrian Regulation on azo dyes in objects (Azo dye Regulation of the Federal Ministry for Women and Health (BMFG), today BMG, as revised in 2006 (BGBl II 52/2006. This regulation forbids the use of 22 azo dyes in objects, all with CAS, EC and index numbers. These aromatic amines are:

- Biphenyl-4-ylamine (4- Aminobiphenyl, Xenylamine)
- Benzidine
- 4- chloro- o- toluidine

- 2- naphtylamine
- o- Aminoazotoluene (4- Amino-2`,3- dimethylazobenzene, 4- o- Tolylazo- o- toluidine)
- 5- Nitro- o- toloidine
- 4- chloroaniline
- 4- Methoxy- m- phenylendiamine
- 4, 4`-Methylene dianiline (4, 4`- Diaminodipehnylmethane)
- 3, 3`- Dichlorobiphenyl- 4, 4`- ylendiamine
- 3, 3`- Dimethoxybenzidine
- 3, 3`- Dimethylbenzidine (4, 4´- Bi- o- toluidine)
- 4, 4´- Methylene di-o- toluidine
- 6- Methoxy- m- toluidine (p- cresidine)
- 4, 4`-methylene- bis- (2- chloroaniline) (2, 2`- dichloro- 4,4`- methylendianiline)
- 4, 4`- oxydianiline
- 4, 4`- thiodianiline
- o- toluidine (2- minotoluol
- 4- methyl- m- phenylendiamine
- 2, 4, 5- trimethylaniline
- o-anisidine (2- methoxyaniline)
- 4- amino- azobenzene

UBA AZO DYES . R-159: www.umweltbundesamt.at/.../pvcweichmacher

Austrian Regulation on plasticisers in objects (Plasticiser Regulation)

The Federal Ministry for Women and Health (BMFG), now BMG, as amended in 2006 (BGBl II 355/2006. This regulation applies to consumer protection for food, hygiene items, textiles and leather. It forbids the use of 6 plasticisers in the above mentioned items, all with CAS numbers. These are:

- Di- Isonylphthalate DINP
- Di- Isodecylphthalate DIDP
- Di- n- Octyphthalate DNOP
- Di (2- ethylhexyl)phthalate DEHP
- Dibutylphthalate DBP
- Benzylbutylphthalate BBP

A limit of 0.1% of the mass applies to all.

PLASTICISERS.: www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage...

Azo dyes in textiles and leather, Study R- 159 of the Austrian Federal Environmental Agency, 1999. This study summarised the current status of research and presented their own research results. It went into a very detailed discussion of azo dyes, pigments and colorants. Also collated was information about toxicity (including allergies and sensitisation), chemistry and the chemical reactions, deterioration in the body and the effect on its physiology, and finally the dyes were named and described together with which azo compounds and chemical reactions were connected to them. Moreover, the people in the production chain and onwards were all considered as a target consumer group. Some heavy metals were also investigated and determined.

The results

There were 60 leather samples from leather jackets and leather pants for the investigation. In 60% of the samples there were no findings, 32% with minor findings and 8% with significant findings over the limit of 30 mg/kg. Among the violations caused by the azo-substances and to a significant extent (10-fold excess or more) were as a rule

- Benzidine
- Others:
- 3,3`-Dimethylbenzidine
- 4- Aminobiphenyl
- 2- Naphtylamine
- 3,3`-Dichlorobenzidine
- For metals with high values:
- Tin 0.8 – 507 mg/kg (significant amounts in more than 50% of the samples)
- Chromium (total) 6 – 228 mg/kg (in almost all samples)

- Chromium VI in approx. 20 % of the samples

AZO DYES REGULATION.: www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage...

6.1.3.2 Germany

German Ordinance on Hazardous Substances (as revised in Dec. 2010)

The Hazardous Substances Ordinance is the protection measure for workers who have to deal with hazardous materials. Hereby, special emphasis is placed on the chemical and physical characteristics of the materials, their health hazards and explosion and flammability. It is associated with the global GHS system (Global Harmonised System).
In § 3, the hazard characteristics are governed by 15 criteria:

1. Explosive (even without additional inflammation)
2. Fire conveying, such materials that promote fires, e.g. through release of oxygen
3. Extremely flammable; substances with an extremely low flash point, or gases which are in the explosion area at atmospheric pressure with air
4. Highly flammable; Substances which heat up at ambient temperature and ignite, or which ignite in brief contact with a smoldering fire source or longer, or liquids with a very low flash point or when in contact with water or damp air develop highly flammable gases
5. Flammable, when in liquid form have a very low flash point
6. Very toxic, if, in small amounts, they result in death or acute or chronic health conditions when inhaled, ingested or come into skin contact
7. Toxic, like 6, however ... in small amounts ...
8. Harmful, like 6/7, but with no amount specified
9. Corrosive if it can destroy living tissue on contact
10. Irritant, if it can cause inflammation after short-term, prolonged or repeated contact with the skin or mucosal membrane without being corrosive
11. Sensitising, if it causes hypersensitivity reactions when inhaled or absorbed through the skin
12. Carcinogenic, if the inhalation, ingestion or absorption through the skin causes inheritable genetic defects or increases their incidence.
13. Toxic to reproduction, if they cause the effect when inhaled, swallowed or absorbed through the skin, genetic damage to the progeny or increase the incidence of genetic damage or cause an impairment of male or female fertility,
14. Mutagenic, if the inhalation, ingestion or absorption through the skin causes inheritable genetic defects or increases their incidence
15. Environmental hazard, if they or their products have the ability to effect the ecological balance, the water, the soil, air, climate, animals, plants or microorganisms in such a way that they cause immediate or delayed danger to the environment.

In Annex III of the ordinance 6 product groups are mentioned, for which there is a prohibition on production or the use of which is severely restricted.
www.bge.de/gv/gefstoffv/inhalt.htm

German Consumer Goods Ordinance (Bedggstv)
www.bundesrecht.juris.de/bedggstv/index.html

This Regulation is dated 10.04.1992, revised in 1998 (I5), last amended on 02.07.2011. Unlike other regulations, the limits stated are often based on migration behaviour, i.e. on volume/surface area (mg/dm). The regulation (Bedggstv) contains a list of approx. 80 banned substances, a list with stringent and one with less stringent limits (220 substances), a list with additives (approx. 550 substances) a list of chemicals with specific migration limits

(approx. 160 substances), a purity list for raw materials and monomers (approx. 40) with detailed explanations and a system for measuring and laboratory procedures.
For leather products (like textiles, special toys, etc.) that may have contact with the skin, special attention is paid to azo dyes, whose use is prohibited. It specifies a limit of 30 mg/kg (release rate). Other azo compounds, e.g. in plastics, are also prohibited.
Many phthalates are also forbidden (DEHP, DBP, BBP, DINP, DIDP, DNOP), as well as a number of PAHs and halogenated compounds.
The Bedggstv list for migration values is also important for the evaluation of chemicals in furs. There are many heavy metal compounds, PAHs, chlorinated organics, acids (esp. Arganic) and their salts or esters, and solvents.

BfR – Federal Institute for Risk Assessment (Germany)

This federal institution was founded in 2002 and is dedicated to the safety of food, products and chemicals.
The BfR has 14 committees that give their recommendations concerning food and animal feed, cosmetics, consumer products and toys. Regarding leather, there is a committee "Textiles and Leather" in the BfR committee for consumer products. This was established in 2008 and dealt with tanned products, among other things, in the second meeting on 19. 01.2010.

DMF, dimethyl fumarate
DMF was used as a preservative. It could lead to serious allergic reactions, dermatitis and respiratory distress. The EU Commission therefore asked member states to prohibit the use of DMF. A product is deemed to contain DMF if the value of DMF in the product exceeds 0.1 mg/kg. However, recently the draft of the European standard regarding DMF described a sufficiently sensitive method.
DMF is not approved as a biocide in the EU. Recently imports are also subject to this restriction. Previously DMF was often packed into leather goods in small bags (sachets). Violations of this regulation can now result in product recall.
Nanotechnology
The use of nanoscale products is steadily increasing. These are used primarily in fibres and coatings. The health risk to consumers would be through attrition which is then inhaled. Usually not only the nanomolecules are worn down but rather the entire conglomerate including the bonding agent.
The increasing trend of equipping with biocide agents based on silver is questionable.

Sensitising dyes, azo and anthraquinone dyes.
21 of these dyes are listed as being sensitising.
BFR: www.bfr.bund.de

RAL – ZU – 155 Shoes , Blue Angel

This RAL deals with the raw leather, other raw materials for footwear production as well as the manufacturing process and the end product.
Leather should only come from animals used in milk and meat production in agriculture, wild animals are specifically excluded.
This RAL sets up a negative list of substances which should not be used. In addition, the list will be sent ahead so a) all SVHC according to REACH incl. all amendments to date

(Candidate list) are not permitted. (b) substances in accordance with EC 1272/2008 (=67/458 EEC) regarding labelling for mixtures and packaging for are to be treated as H- statements (risk statements according to GHS regulation), or even the current R- statements (risk statements). c) except for impurities that are not subject to the safety data sheet (as per Annex II (3) REACH. d) For mixtures, substance limits may not exceed the Dangerous Preparations Directive (1999/45 EC) or the GHS (EG/1272/2008). e) Except for monomers and additives which were covalently (solid) incorporated into plastics. f) The Federal Environmental Agency may grant exceptions, e.g. in technical substitutions.
Chemical preservatives for leather should be avoided during storage and transportation; otherwise the products must be labelled. Biocide and biostatic products are not allowed (according to EU 98/8/EC). Exceptions are made for substances on the high payroll list BgVV for chemicals (244 listed). Excluded substances include, among others, DMF dimethyl fumarate (detection limit 0.1 mg/kg) as well as chlorinated phenols (PCP, TCP, 2,4,6,- TCP) incl. their salts and esters (0.5 mg/kg total value), chromium IV (detection limit 3 ppm).
Other provisions:

- ...4 As, Cd, Pb total max. 50 mg/kg (semi-annual declaration. Declaration by applicant)
- ...5 Nickel: 0.5 µg/cm²/ week skin contact
- ...6 extractable heavy metals, 11 different, from 0.02 mg/kg (Hg) to 200 mg/kg chromium total chromium limit
- ...7 organotins are not permitted. Tributyltin 0.025 mg/kg, all sums 1 mg/kg.
- ...8 formaldehyde: Not allowed. Max. 20 mg/kg in children's shoes.
- ... 9 azo dyes: those that split off amines are not allowed (Annex 5). In addition no paints, pigments or dyes that contain Cd, Hg, Pb or Ni or which are carcinogenic, or can cause inheritable or reproductive harm. Azo compounds: limit 20 mg/kg, for dispersion paints 50 mg/kg.
- ...10 phthalates and plasticisers: Excluded are TCEP, DNOP, DINP, DIDP, DEHP, DBP, BBP and DIBP (total maximum 1000 mg/kg).
- ...11 PAHs (GS – Category 2) may not exceed 30 seconds skin contact.
- ... 12 nitrosamines. Not allowed (List Annex 6)
- ... 13 Dimethylformamide: Not allowed, max. 10 mg/kg.
- ...14 Short-chain chlorinated paraffins and chlorinated alkanes: C10-C13 not allowed. Max .1 g/kg
- ... 15 Chlorinated benzenes and toluenes: According to List Annex 6 not deployable, max. 1 mg/kg.
- ... 16 Alkylphenol ethoxylates and alkylphenols (APEO): Only the nonylformen are not allowed from these, max. 100 mg/kg.
- ... 17 Perfluorinated and polyfluorinated (PFC) are not allowed (manufacturer declaration)
- ... 18 flame retardants: Must be identified according to requirement 3.5.1 and treated according to REACH and GHS.
- ... 19 Nanomaterials: Not allowed (manufacturer declaration)
- ...20 Smell: 5- part scale (3. Clear but tolerable smell). Carried out by the manufacturer with at least 7 test subjects.

RAL-155-SHOES: http://www.blauer-engel.de/de/produkte_marken/vergabegrundlage.php?id=213

RAL – ZU – 154 Textiles to Obtain the Seal "Blue Angel"

This seal could be obtained by companies and placed on their products or their packaging if they meet several criteria, which affect not only the end product but also all stages of production including the emissions and workplace conditions. The aim is the production of

"Sustainable textiles". This RAL deals with textiles, but not textile shoes, furniture or accessories with PVC parts.

Generally excluded are:

All EU REACH/SVHCs and all substances that are on the candidate list. The GHS limits (EG/1272/2008) apply if they are more stringent. In mixtures, such substances may not exceed 0.1 %. Where there are other limits from relevant regulations that are more stringent, these are valid. Exceptions are made for materials which do not have to be included on safety data sheets or non-substitutable fabrics. The use of aromatic and halogen solvents, quaternary ammonium compounds (except those based on silicone and ester) (see list below), surfactants and complexing agents, including nano-products is prohibited at all stages of production.

Also included in the prohibition are halogenated carriers, heavy metal salts, metal complexing agents, carcinogenic substances (Annex 4.1), sensitising agents (Annex 4.1), biocides (Biocide Directive 98/8/EC), per and polythionic PCE and halogenated substances.

Limits are set for the waste water.

With regard to the finished product:

Formaldehyde: Not allowed (no limits named)

Extractable heavy metals:

	Category 1 (Small children (under 3 years)	Category 2 (all others)
Antimony	30 mg/kg	30 mg/kg
Arsenic	0.2 mg/kg	0.2 mg/kg
Lead	0.2 mg/kg	0.8 mg/kg
Cadmium	0.1 mg/kg	0.1 mg/kg
Chromium	1.0 mg/kg	2.0 mg/kg
Cr VI	<0.5 mg/kg	<0.5 mg/kg
Cobalt	1.0 mg/kg	4.0 mg/kg
Copper	25 mg/kg	50 mg/kg
Nickel	1 mg/kg	4 mg/kg
(Ni in contact with the skin 0.5 µg/cm²)		
Mercury	0.02 mg/kg	0.02 mg/kg

Chlorophenols (PCP, TeCP, 2,4,6-TCP) are forbidden, phthalate and plasticisers may also not be used (TCEP, DNOP, DINP, DEHP, DBP, BBP, DIBP)

Organotin compounds must be below the limit values:

Tributytin (TBT)	0.025 mg/kg
Dibutyltin (DPT)	1 mg/kg
Dioktyltin (DOT)	1 mg/kg
Monobutyltin (MBT)	1 mg/kg
Triphenyltin (TPT)	1 mg/kg

CMR (carcinogenic, mutagenic, toxic to reproductive processes) – substances in dyeing agents are not allowed

Chlorinated benzenes and toluenes may not be used (limit 1 mg/kg)

Polycyclic aromatic hydrocarbons (PAH) are forbidden, max. 1 mg/kg or 30 sec. Skin contact

Dimethylformamide is not allowed

When washing, colour fastness must be present as well as during acid and alkaline perspiration (Proof according to DIN EN ISO 105-E04)

The seal Blue Angel is awarded in accordance with contractually agreed upon details with the manufacturer, distributor or importer.
RAL-154-TEXTILES: www.blauer-engel.de/RAL-154

Recommendations of the Federal Environmental Office regarding the application of the „Best available Technologies" (BVT) in leather production
The Federal Environmental Office calls upon the leather industry to apply BVT, especially when

- using chemicals
- in the beamhouse
- tenning
- trimming
- packing

Thereby, the BVT leaflets published by the EU are to be consulted[60].

6.1.3.3 The Netherlands

Dutch Wijziging Arbeidsomstandighedenregeling (amended ordinance for conditions at the workplace)
Adopted on 6 Dec. 2006 by the Staatssekretaris van Sociale en Werkgelegenheid, inspired by the Directives 2006/15/EC, 98/24 EC, 91/322/EEC (PbEC L 38). This regulation deals primarily with the protection of company employees directly in the workplace when dealing with potentially dangerous products and materials. It requires production processes to meet the current technologically best industry standards.
In addition to a variety of technical instructions and link to relevant regulations, a number of substances are named together with the limits that apply when handling them. These limits are contacts for the purposes of occupational exposure limits (OEL) and also in mg/m³ as contact time limits (CTL) in 8 hour periods and in 15 minute periods.
WIJZIGINGARBEIDSOMSTR.: www.vavb.nl/nievws/wijziging.pdf

6.1.3.4 Great Britain

General Product Safety Regulation UK (2005), No. 1803 of the British Parliament and the Department of Trade and Industry, entered into force on 1 Oct. 2005. This regulation implements the EU Directive 2001/95/EC on general product safety.
GENPRODSAFETYR: www.legislation.gov.uk/uksi/2005/1803/contents/made

[60] Federal Environmental Office: Environmental Standards in the Textile and Shoe Industry – A Guideline based on the BVT leaflets by the EU, Berlin 2011 www.umweltbundesamt.de/uba-info-medien/4128.html

6.1.3.5 Switzerland

Chemical Risk Reduction Regulation (ChemRRV) in Switzerland

Regulation to reduce risk when dealing certain particularly dangerous substances, preparations and articles, from 18 May 2005, as of 1 Feb 2011, issued by the Swiss Federal Council. It is seen by the Swiss as being the analogue of the EU Banned Chemicals Regulation 76/769/EEC.

It prohibits or restricts hazardous substances and regulates the handling of particularly hazardous substances. These include:

- Halogenated organic compounds may not be placed on the market, e.g. pentachlorophenol, tetrachlorophenol, particularly in connection with leather and textile goods.
- Short chain chlorinated paraffins are prohibited. Permitted mass percentages are given for some applications.
- Aliphatic chlorinated hydrocarbons are not permitted, e.g. dichloroethylene.
- Ozone layer destructive substances
- Stable substances in the air
- Asbestos. Here also, the preparations are listed by manufacturer name.
- Mercury is forbidden.
- Octylphenol, nonylphenol and their ethoxylates are forbidden. Here, leather and textile products are explicitly mentioned.
- Flame retardant substances are banned, especially various aliphatic phosphates and brominated substances.
- Carcinogenic, mutagenic, and substances that are toxic to the reproductive processes listed in Annex VI, 4 Directive 67/548/EEC, are banned.
- Hazardous liquids according to Articles 4 and 5 of the Swiss Chemicals Regulation. The H and R statements of the EU apply here as well as special labelling and packaging.
- Benzene and related compounds (toluene) are prohibited.
- Nitroaromatics, aromatic amines and azo dyes are prohibited, e.g. 2-naphthalene, benzidine, nitrobiphenyl.
- Di- µ-oxo-di-n-butyl-stannylhydroxoboran is forbidden, max. 0.1 mass percent limit.

For preparations and articles:

1. ...
2. Detergents
3. Solvents: dichloromethane,1,1- dichloroethane, 1.2- dichloroethane, chloroform, trichlorethylene, tetrachlorethylene, may not exceed a total of 1 percent by mass.
4. Biocides
5. Pesticides
6. ...
7. Plastics and additives
8. ...

In the annexes of the ChemRRV there are also limits, based on product groups, fields of application and materials.

CHEM-RIS-RED-V.: www.gesetze.ch/sv/814.81/814.81_010.htm

Toys Regulation, Switzerland (Regulation on the Safety of Toys (VSS 817.044.1 from 27 March 2002)

Entered into force on 1 May 2002, last amended on 13 January 2011, based on Article 43 LGV (Food Items Regulation). The section on chemical ingredients is concise and often

refers to the EU REACH (1907/2006 EC), 67/548 EEC (Classification, packaging, labeling of hazardous substances) as well as 1999/45 EC.
According to the Swiss Toy Regulation, toys should be healthy products. In dealing with toys, some substances may be ingested daily in high quantities in certain cases:

µg 0.2 Antimony	µg 0.7 Lead
µg 0.1 Arsenic	µg 0.5 Mercury
µg 25.0 Barium	µg 5.0 Selenium
µg 0.6 Cadmium	Benzene: may not exceed 5 mg/kg free
µg 0.3 Chromium	availability.

No dangerous substances included in EU 67/548/EEC Article 2, Paragraph 2 and Article 3 of the EU Directive 1999/45/EC are allowed. The provisions of the Chemical Risk Reduction Regulation also apply.
Toys must not contain more than 0.1 percent by mass (total limit) of di- (2-ethylhexyl)phthalate (DEHP), dibutylphthalate (DBP) and benzylbutylphthalate (BBP). Toys that could enter the mouth may not contain more than 0.1 percent by mass (total limit) of di-isononylphthalate (DINP), di- isodecylphthalate and di-n-octylphthalate.
SPIELZEUGV.: www.admin.ch/ch/d/as/2009/3575.pdf

Swiss Regulation on Goods for Human Contact
Regulation of the EDI (Federal Department of Home Affairs) on articles for the mucous membrane, skin, and hair as well as candles, matches, lighters and joke products from 23 November 2005, as of 1 November 2010, and in addition to the Food and Commodities Regulation Article 3 and 38 – 43.
This regulation defines objects that are in contact with skin, their labelling, composition, limits on contaminants as well as the investigation methods. The list of items is very heterogeneous. Relevant to furs is:
Chemical substances in textile materials and leather products

- Azo dyes are banned, the max. release may amount to 30mg/kg
- Arsenic and its compounds are forbidden
- Lead and its compounds are forbidden
- Para- phenyldiamine is prohibited
- DMF max. 0.1 mg/kg
- Tin is allowed with a max. 0.1 mass percent (based on diethyltin compounds)
- These requirements apply to shoes, gloves, baby products and feminine hygiene products.

GEGENSTHUMANKONTAKTV.: www.admin.ch/ch/d/sr/8/817/.023.41.de.pdf

6.1.4 Non-Government Organisations and Independent Certifiers

6.1.4.1 SIN-List

SIN- List (Substitute it Now) of non-governmental organisations (NGOs)
The list includes 356 substances that are particularly hazardous in the opinion of the participating NGO. The SIN List is updated by the NGO ChemSec at irregular intervals.
www.chemsec.org/list/about-sin

6.1.4.2 Bremer Environmental Institute

The Bremer Environmental Institute made this study possible by carrying out the residue and contaminant analyses as well as evaluating these with their own ratings, which are reproduced in extracts. It is certified according to DIN EN ISO/IEC 17025. The Environmental Institute conducts its own environmental risk research. Through this, particularly novel risks should be identified, ideally before the contaminants cause damage to the environment or people. The Environmental Insitute has taken part in approx. 200 scientific publications so far. One focus of theirs was on air emissions, and hereby on PAHs, preservatives, wood preservatives, PCB (in day-care centres, schools and public buildings), solvents and components from the manufacturing of plastics (incl. plasticisers, stabilisers, dyes, etc.) as well as medium and heavy volatile substances. http://www.bremer-umweltinstitut.de/

6.1.4.3 EcoAid

EcoAid has determined its own values for the tested groups of chemicals in fur products, taking into account the statutory and private regulations presented here. Thereby EcoAid attempted to apply the principle of preventative consumer and health protection. The product evaluations presented in this report are based as a rule on the benchmarks derived by EcoAid. www.ecoaid.de

7 Toxic Ingredients - Portraits of Relevant Chemicals in Fur Production

Firstly, this chapter presents important statutory and private standards which include limits and benchmark values for leather and textile products. As there are no specific standards for fur products, the regulations of these closely related product groups are made use of in this report. Basically, it would be hoped that industry and government institutions will create regulations and standards that also clearly include fur products.

In chapter 5.2 it was shown that a wide range of chemicals is used in fur production. In principle, it is assumed that residues of these substances may appear in the end product and that contact with workers in the textile and fur industries and in retail businesses as well as with consumers is likely. These substances also include particularly toxic substances[61].

This chapter provides an overview of the variety of chemical groups and individual substances that are used in fur production. The fur samples that were selected for this report were analysed for the residues of a selection of these chemicals that are particularly relevant in the fur production processes.

Fur – Pure nature?

"Fur is a piece of nature, like leather and linen, like cashmere and silk. The proverbial feeling good in a "second skin" can be explained physically and even confirmed by measurements. ... As pure nature, fur also gets high marks from an ecological point of view."

A bold statement by the German Fur Institute of the Fur Industry, given the quantities of chemicals used.

http://www.pelzinstitut.de/html/pelz_ist_etwas_besonderes.html

[61] The information on the toxicity of the active ingredients is derived from these databases: BIA GESTIS, ESIS, IARC, TOXNET, NTP, EU Endocrine Disruptor List. If these databases showed no or only very few entries for a substance which was detected, the meta-data literature database PubMed was also looked at. Information concerning the limits and benchmarks still come from the Bremer Environmental Institute.

7.1 Degreasing and Cleaning Chemicals

7.1.1 Alkylphenols incl. Nonylphenol and Alkylphenol Ethoxylates

This group of substances has been examined in fur samples in the context of this report.

7.1.1.1 Application

The alkylphenol ethoxylates (APEO)[62] are a group of non-ionic surfactants that are frequently used in industrial cleaning agents or in some pesticides. They are also used in oil extraction, construction chemicals, paints, pulp production and in adhesives. It can happen that, among others, octyl and nonylphenol could be released in their application. In the production of furs, the dried fur skins are degreased with alkylphenol ethoxylates. As early as 1986, the manufacturers of household detergents and cleaning products in the EU committed themselves to dispensing with the use of alkylphenols (nonyl and octylphenol). In 1992, the renunciation was extended to industrial cleaning agents. In Switzerland, they have been forbidden since August 1987. Nonylphenol ethoxylates (NPEO) are no longer authorised for use in Europe since 2003. However, some 20,000 tonnes of the material is still being produced in Europe every year, presumably primarily for export. Through the import of clothing items from countries like China, India and Turkey, approx. 4,500 tonnes of the substance is "imported" into the EU per year as residues in textiles, furs and leather products.

7.1.1.2 Toxicology and the Environment

Octyl and nonylphenol ethoxylates (NPEO) have toxicological significance as they split into octyl and nonylphenols through aging or treatment in sewage plants. These alkylphenols are water-insoluble liquids with mild odor like phenols. The nonylphenol isomers are classified in the EU in terms of their human and ecotoxicological properties as follows:

Toxic to reproductive processes, Category 2; H361fd
Acute toxicity, Category 4, Swallowed; H302
Corrosive on skin, Category 1B; H314
Hazardous for water courses, Acute Category 1; H400
Hazardous for water courses, Chronic Category 1; H410

The label must carry the following warnings:

H361fd: Suspected of impairing fertility. Suspected of damaging unborn children.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H410: Very toxic to aquatic life with long lasting effects.

Nonylphenol is very toxic to fish, aquatic organisms and algae. It acts to inhibit the growth of bacteria in the soil. Degradation products of nonylphenol ethoxylate are more toxic than the parent compound with

[62] The following substances are of particular relevance in fur processing: Alkylphenols (AP), especially octylphenol (OP), nonylphenol (NP) as well as its ethoxylates (APEO, OPEO, NPEO). These are specified in detail under the following CAS numbers. AP: CAS 68555-24-8, OP: CAS 1806-26-4, NP: CAS 68152, APEO: CAS 37205-92-1, OPEO: 1322-97-0, NPEO: CAS 25154-52-3

decreasing side chain length. There is also evidence of harm to the germ cells in fish and estrogenic effects in mammals caused by nonylphenols. On the whole, nonylphenols exhibit a high tendency to bioaccumulate and are persistent in the environment. They get deposited in river sediments but also in household dust. On the EU list of endocrine disruptors (hormone poisons), nonylphenols received category (1), the highest classification. Recently, DNA damage was detected in humans. Since they are in the food chain from microbes or plants, especially algae, accumulate in animals (meat), they are regularly found in human breast milk (www.greenpeace .at/..../Alkylphenole).

The same applies to octylphenols, relative to the water hazard, category 2 (LC 50: 1.05 mg/l), for NPEOs LC50: 0.1-1 mg/l) www.umweltdaten.de/wasser...octylphenol.pdf.

In APOEs the old R-Statements apply: 43, S- Statements: 2-13-20/21-24-37 For NPEOs specifically, R-Statements: 22-34-50/53, as well as the environmentally relevant S-Statements (new P-Statements): 26-36/37/39-40-60-61 (Handbook. DangerousGA 1/4ter. Bd.6, Fact sheet 2072-2502). The statements point to the potential hazard of a substance and provide instructions for handling it. In summary, this means with regard to the above mentioned substance: Causes chemical burns, very toxic to aquatic organisms, may not be inhaled, must be kept out of reach of children, protective clothing and a face mask should be worn when handling the substance, may not be released into the environment and should be disposed of as very hazardous waste.

7.1.1.3 Statutory and Industrial Standards

According to the Hazardous Substances Regulation and REACH, in the EU nonylphenol ethoxylate may not be used as substance in textile and leather processing or in the finishing with a content greater than 0.1% (1000 mg/kg): In Annex XVII of Regulation (EC) No. 1907/2006 (REACH Regulation), as amended in regulation (EC) No. 552/2009, the use and marketing of nonylphenol and nonylphenol ethoxylates is limited to the following purposes according to entry under section 46: May not be used or marketed in textile and leather processing either as a substance or as a mixture at concentrations of 0.1 mass percentage or more, except for the degreasing of sheep skins together with the use of special sewage treatment plants and as long as no nonylphenol ethoxylates is contained in the effluent.
The above provisions are directly applicable only to substances and mixtures. However, in the fur products examined, it is dealing with products in the sense of Article 3 (3.) of the REACH Regulation, which is not covered by the cited regulation. The REACH Regulation therefore can only be applied in a strict sense to fur products if the product was processed or manufactured in the EU. Then, the possible use of nonylphenol and nonylphenol ethoxylate would be subject to the restrictions in accordance with Paragraph 46 in Annex XVII of the REACH Regulation.
However, when this product is not manufactured in the EU then the restriction would be irrelevant, because the actual content in the finished product is not regulated in the EU. www.reachhelpdesk.at/hilfe/rechtstexte.
As the origin of the products studied in this report was not clearly identifiable as a general rule, and processing in the EU or the EEA is not able to be excluded, it is initially suspected that with a NPEO content of less than 0.1% in the textile, the use of chemical mixtures with equally less than 0.1% NPEO can have occurred in the EU. Authorities in the EEA are therefore required, in the opinion of the author, to review the suspected possible illegal use of N/OPEOs in the processing of the textiles/furs in the EEA in such cases. Since China has

also been subject to severe restrictions in the use of NPEOs[63], this obligation would be extended also to non-EU countries.

From the perspective of the EU country Sweden[64] the legal situation in the EU is unsatisfactory. It advocates a EU wide ban on nonylphenol ethoxylates in imported textiles.

Similar restrictions have up to now not existed for octylphenol ethoxylates. Following the classification of this substance class as a "Substance of Very High Concern" by the German Federal Environmental Agency[i] in 2011, this substance class is evaluated in this report in the same manner as NPEOs.

According to the Global Organic Textile Standard (GOTS) the use of all APEOs is forbidden, as well as according to the IVN (Int. Association of Natural Textiles) and also according to the Water Framework Directive of the EU 2000/60/EC. The same applies to regulations and standards of various European countries. According to the Chemical Risk Reduction Regulation of Switzerland (ChemRRV), they are expressly prohibited in textiles and leather goods. According to the German RAL-ZU-155 Shoes, only nonyl derivatives are expressly prohibited. However, in RAL-ZU-154 Textiles they are not even mentioned. The limits generally refer to the REACH/SVHC of the EU or the GHS (EG/1272/2008), as this is the relevant statutory provision in most EU countries. The German SG – symbol for contaminant inspected leather products gives a limit of 0.1% for the alkylphenols relative to each individual substance.

Benchmarks and limits for octylphenol (OP), nonylphenol (NP) and their ethoxylates (OPEO, NPEO):

	NP and OP	NPEO	OPEO
REACH/SVHC	**0.1%**	**0.1%**	**Cand.**
EU SpielzeugR	-	-	-

[63] http://chemicalwatch.com/6300/china-adds-nonylphenols-to-restricted-substances-list
[64] 2011-09-12 Sweden advocates an EU ban of nonylphenol ethoxylates in imported textiles

Sweden has informed the European Chemicals Agency, ECHA, of Sweden´s interest to provide documentation about nonylphenol and nonylphenol ethoxylates, NPEs. The investigation will include arguments to support a ban of these substances in textiles imported to the EU. The Swedish Chemicals Agency (KemI) will provide the documentation no later than in August 2012. It may take a few years after that date before a restriction of NPE has been incorporated into the European chemicals legislation REACH (Annex XVII). Use of nonylphenol and nonylphenol ethoxylates is already prohibited within the EU, with the exception of a few use areas. Nonylphenol ethoxylates may be used in, for example, cleaning products and paints. Nonylphenol ethoxylates may transform to nonylphenol in the environment where the substance has low degradability. Nonylphenol is very toxic to aquatic organisms and may cause harmful long-term effects in the aquatic environment. In addition, nonylphenol has suspected hormone-disrupting properties. See ECHA Registry of intention for Annex XV dossiers

EU WasserrR	p	p	p
GHS			
SIN	yes	yes	yes
GOTS	-	•	-
IVN	50mg/kg	50mg/kg	50mg/kg
OEKOTex	-	-	-
ChemRRV CH	0.1%	0.1%	0.1%
SpielzeugR Ch	-	-	-
AzofarbstV AT	-	-	-
BedarfsgV D	-	-	-
SG Label D	**0.01% (100 mg/kg)**	**0.01% (100 mg/kg**	**0.01% (100 mg/kg**
RAL Shoes D	0.01% (100 mg/kg)	0.01% (100 mg/kg	0.01% (100 mg/kg
6 Countries = EU REACH	0.1% (1000 mg/kg)	0.1% (1000 mg/kg)	0.1% (1000 mg/kg)
COTANCE	0.1% (1000 mg/kg)	0.1% (1000 mg/kg)	0.1% (1000 mg/kg)
EcoAid	**50 mg/kg**	**50 mg/kg**	**50 mg/kg**

6 countries: Austria, Rumania, Bulgaria, The Netherlands, UK, Germany. Cand. = Candidate for REACH/SVHC, -= is not present, 1%= 1000 mg/kg, p= prioritate (to be reduced)

Review by EcoAid

Fur products that contain octyl or nonlyphenol ethoxylates, octyl or nonylphenol in concentrations above 50 mg/kg are, from the view point of precautionary environmental and health protection, not recommended and should not be sold.

7.1.2 Paraffinsulphochloride

In the *degreasing process* paraffinsulphochloride is used, among others. Regarding this substance, the German Furrier's Guild writes: "...to date, sulphochlorides, such as paraffinsulphochloride, have been commonly used as an aid in leather production and surfactants. These sulphochlorides, due to their toxic characteristics, the limited biodegradability and inhibiting effect of microorganism growth, are potential water pollutants and are usually classified as Category 2 water pollutants (hazardous to water)."

7.2 Tanning Chemicals

7.2.1 Heavy metals

Heavy metals[65] include 60 elements with a weight > 4.5 mg/cm³. Some are essential to organisms as trace elements, example zinc, iron, manganese and also copper. Others are damaging to organisms, for example cadmium, thallium, lead, mercury or chromium. They are released into the environment through water or air and represent an insidious threat to human health and the environment. Some heavy metals can be allergenic in low concentrations (e.g. nickel), others can cause acute and chronic poisoning (e.g. arsenic). They accumulate in soils and sediments. They are emitted by smelters, as well as

[65] http://www.umweltdatenbank.de/lexikon/schwermetall.htm

electroplating and pickling operations. They are used, among others, as flame retardants, preservatives and wood preservative, as pigments in paint and varnishes, leather processing and the manufacturing of plastics.

7.2.1.1 Statutory and Industrial Standards

According to the EU Toy Safety Directive (2009/48/EC) limits are set for all three heavy metals. According to REACH/ SVHC of the EU, all three heavy metals are limited to less than a 0.1 % proportion in the product.
The General Product Safety Regulation of the UK refers to the EU 2001/95/EC and thus is based on the System REACH – SVHC- RAPEX (see above for limits). This regulation must also be complied with by all other Member States.
The Swiss Toy Regulation refers to the three heavy metals with limits of Cr 0.3 µg, Pb 0.7 µg and Hg 0.5 µg for daily biological availability. The Swiss Regulation on Products for Human Contact prohibits lead in textiles and leather products. According to the Swiss ChemRRV, all three heavy metals are provided with extremely low limits.
According to the Dutch Wijziging Arbeidomstandighedenregeling, Cr III is limited to 0.06 mg/m³in an eight hour average limit at the work place.
The German Consumer Goods Regulation lists migration limits for lead and mercury in Annex II/III/13.

The Oeko- Tex Standard restricts all three heavy metals with a specified limit by product class.
The IVN Natural Textile prohibits the use and import of all heavy metals and identifies the stages in the production process which are affected by the ban. The IVN Natural Leather also expressly prohibits chromium tanning and also prohibits the use of heavy metals in dyeing.
The GOTS Standard prohibits the use of further heavy metals and defines relatively stringent limits.
According to the German SG- Symbol for Contaminant Inspected Leather Products, the amount of Cr VI in the products must be less than detectable limits. A limit is given for lead, and a more stringent limit is given for mercury.
Limits for all three substances are also given in the German RAL- ZU- 154 Textiles, and it distinguishes between Cr(VI) and the total chromium content.
The RAL- ZU- 155 Shoes sets the limit for Cr(VI) as the detection limit, and sets for Pb the value of 50 mg/kg. In addition, manufacturer must submit semi-annual justifications for the use of these hazardous substances.

Reference values for lead (PB), chromium (Cr), mercury (Hg):

	Pb	**Cr total / Cr (VI)**	**Hg**
REACH/SVHC	0.1%	0.1%	0.1%
EU SpielzeugR	0.7 µ**	0.3 µ**	0.5 µ**

EU WasserrR	0.05 mg/l##	0.05 mg/l##	1 µg/l##
GHS	Yes	Yes	Yes
SIN	Yes	Yes `	Yes
GOTS, eluate/soluble	0.2 mg/kg	1.0 mg/kg 0.5 mg/kg (Cr (VI)	0.02 mg/kg
IVN	-~	-~	-~
OEKOTex 100 eluate/ extractable	0.1/0.2 mg/kg*	0.1/2.0 mg/kg*	0.02 mg/kg
OEKOTex 100 Total exposure	90 mg/kg	90 mg/kg	
ChemRRV CH	0.1 %	0.1 %	0.0005 up to 2 % +
SpielzeugR Ch	0.7µg**	0.3 µg**	0.5 µg**
AzofarbstV AT	-	-	-
BedarfsgV D	0.8 mg/dm²^	0.3 mg/kg, 0.005% ^^, 3 mg/kg (CrVI)	100 ppm #
SG Label D, Eluate/soluble	0.8 mg/kg ++	- **Cr(VI): 3.0 mg/kg**	0.02 mg/kg ++
RAL Blue Angel Shoes, Eluate	**0.8 mg/kg**	**200 mg/kg** **Cr(VI): 0.5 (Textiles)**	**0.02 mg/kg**
6 Countries = EU REACH	EU Directives	EU Directives	EU Directives
COTANCE **EcoAid- Eluate/soluble**	-`` **0.4 mg/kg**	-`` **100 mg/kg (Cr III)**	-`` **0.02 mg/kg**

6 countries: Austria, Rumania, Bulgaria, The Netherlands, UK, Germany. -= not present, 1%= 1000 mg/kg, *Baby, second value skin contact, ** daily biological availability, + in batteries, depending on the type, ++ in leather and furs, total As, Cd, Pb, ^ Emission Limits, ^^ first value for Cr VI, second value for dyeing agents, # Total Cd, Hg, Cr VI in printing dyes, Directive EU 75/440/EEC Surface Water, ~ based on GOTS, ~~as Cr VI, `as PB acetate, based on REACH

7.2.1.2 Lead

Lead, CAS No. 231-100-4[66], was examined in fur samples within the context of this report. Lead plays a role in dyes as well as a preserving agent in leather. The metal and its anorganic compounds and taken in either through inhalation or ingestion and are amongst the most hazardous substances to humans (R20/22 and R33) with cumulative effect. The target organs are mainly red blood cells, bone marrow and cell functions. Lead is stored in the bones. Organic lead compounds are also able to be absorbed through the skin and can cause poisoning. Virtually all lead compounds are CRM substances, carcinogenic, mutagenic

[66] www.chemgapedia.de/.../metalle.toxizitaet_blei.vscml.html

and toxic to reproduction. They can damage unborn children (R61). Lead poisoning usually follows an insidious course. The first symptom is a discolouration of the gums. Later there is anaemia, the peripheral nervous system is attacked and it leads to paralysis.

7.2.1.3 Chromium

The total content of chromium, soluble chromium and the content of the especially toxic chromium (VI) were comprehensively investigated in all fur samples within the framework of this report.
Chromium salts are used for curing leather. Mercury is used in the dyeing.
The use of chromium (III) salts in the tanning process is very common. Depending on the process, especially when used with oxidising or alkaline chemicals, elevated levels of the highly toxic chromium (VI) compounds can occur.

- Chrom(III)- oxide (Cr- III)

Cr -III CAS No. 1308-38-9[67] is a synthetically produced olive-green pigment and is using in the dyeing process. It is considered relatively non-toxic and therefore no H-, P- or R-, S-statements have been defined. It is weakly absorbed by the action of stomach acids.

- Chrom(VI)- oxide (Cr- VI)

As part of this report, five samples, in which a high chromium content was observed, were also investigated for chromium (VI).
Cr (IV) CAS No. 1333-82-0 is a dark red substance. It is considered very toxic, very hazardous for the environment and supports combustion according to RL EU 67/548/EEC.
Chromium (VI) is carcinogenic, genotoxic, highly toxic when inhaled, ingested or in contact with skin. It causes severe chemical burns, can cause damage to various organs and fertility, is very allergenic and toxic to water organisms.

For a long time there was only a limit value for chromium (VI) for work gloves and cement. As part of the nationwide monitoring programme for consumer products by the Federal Office for Consumer Protection and Food Safety (BVL)[68] in 2008, chromium (VI) was found in 42.5% of the leather goods worn close to the body. Due to these findings, on 13.8.2010 a change in the Consumer Goods Regulation now limits the content of chromium (VI) in other leather goods to a maximum value of 3 mg/kg[69].

The following warnings apply to Cr(VI)[70]:

H 271-350-340-361f-330-311-301-372-314-334-317-410. i.e.: May cause fires or explosions, can cause cancer (after inhalation) and also cause genetic defects, probably affects fertility, death by inhalation, toxic in contact with skin, toxic when swallowed, damages the organs, causes severe chemical burns and eye damage, may cause asthma, allergies and respiratory problems when inhaled, is very toxic to aquatic life with long lasting effect.

[67] http://www.gesundheitsamt.de/alle/umwelt/chemie/met/ch/inobl.htm
[68] BVL 2010: Reports on food safety in 2009. Nationwide monitoring plan. Federal Office for Consumer Protection and Food Safety (BVL) 2010.
[69] http://bundesrecht.juris.de//bedggstv/anlage_4_25.html
[70] http://www.gesundheitsamt.de/alle/umwelt/chemie/met/ch/infobl.htm

P 201-273-280-301-330-331-304-340-305-351-338-309-310. In summary: Observe special instructions, release into the environment is prohibited, complete body protection is necessary, calm and wash affected people, call a physician or poison control centre.
Cr- VI should be disposed of as a hazardous material.
Cr- VI is accumulated in erythrocytes. Its biological half-life is 22 days. It is 1000 times more toxic than Cr- III. The limit for air is 0.1 mg/m³. The clinical reference value in blood is 1 µg/l, in urine 5 µg/l.
Cr- VI effects, when taken orally: mucosal irritation and burns, vomiting, diarrhoea, bleeding in the gastrointestinal tract. Occurring after inhalation of 2- 3 mg/m³: coughing, shortness of breath, chest pains and fever. Furthermore, allergic and eczematous skin reactions, skin and mucosal ulcerations, perforation of the nasal septum. It can be allergenic.

According to the German Federal Institute for Risk Assessment BfR the highest concentrations of Cr(VI) have been found in gloves, leather goods and shoes up to now. Especially chromium (VI) is considered highly allergenic and should be avoided in the manufacturing process. As it is stable at higher pH values, the addition of the use of reducing agents, like sodium thiosulphate or ascorbic acid among others, is recommended in manufacturing. Based on own studies, it has been shown that chromium (VI) is formed from the less hazardous chromium (III) under the effects of UV radiation and daylight. Similar effects occur at higher temperatures, such as those that occur in leather production, as well as in contact with adhesives, which are used in shoe production. The BfR therefore recommends that the leather industry also put finished products through post-treatment with reducing agents.
According to the German Federal Environmental Agency, values in excess of 2% Cr(VI) are a cause for concern.

7.2.1.4 Mercury

This substance has been investigated in fur samples within the context of this report.
Mercury (Hg) CAS No. 7439-97-6 is a silver, fluid metal, whose salts are mainly used as industrial chemicals. It is used, among others, in thermometers, lamps, amalgam, electrolysis, gold panning, in disinfectants and corrosives. Traditionally it was used in the production of beaver hats. Hence the term "mad as a hatter". Hatters suffered from the so-called Mad Hatter Syndrome, a form of mental disorder (as seen in the Mad Hatter in Alice in Wonderland). Mercury has a very highly acute and chronic toxicity.
Mercury can be easily absorbed by the body through the intestine in salt form. It spreads rapidly through the body because it can diffuse through cell membranes. It also attacks proteins and then cuts the sulphur bridges. Chronic poisoning is possible e.g. through ingestion (Miamata's disease among others), and through amalgam dental fillings among others.
The following hazards apply:
H360D: May damage unborn children
H330: Fatal if inhaled
H372: Causes damage to organs through prolonged or repeated exposure
H410: Very toxic to aquatic organisms with acute and long-term effect
R48/23: May cause serious damage to health if inhaled

It should be disposed of as a hazardous waste and stored in a closed vessel
Hg is a CMR classified substance (carcinogenic, mutagenic, toxic to reproduction). Mother and youth protection laws must be observed.

7.2.2 Formaldehyde

This substance has been investigated in fur samples within the context of this report.

7.2.2.1 Use

Formaldehyde CAS No. 50-00-0 is the common name for the chemical compound methanal. Es It occurs naturally in the atmosphere through photo-oxidation, in some fruits and also in higher organisms. 21 million tonnes are produced worldwide for industrial purposes, in Europe around 4 million tonnes are produced. It is found in some plastics, tanning agents, preservatives and textiles, which thereby become free of creases. This is still allowed today but under the proviso that the product is labelled with information that it needs to be washed before being worn for the first time. Formaldehyde-releasing compounds are used in various products as a preservative. In tanning, a number of chemicals are used which are cross linking with formaldehyde in the skin or which use formaldehyde in production as a preservative. In leather products this can lead to significant levels of formaldehyde if the chemical is not fully bound or if it is released through reaction with water or washed out. If furs are smoothed, the ironing solution formaldehyde is added. Formaldehyde has been partially replaced by the equally dubious glutaraldehyde in leather production. However, glutarardehyde could not be detected in the 35 samples during the preliminary investigations for this report, in contrast to formaldehyde.

7.2.2.2 Toxicology and the Environment

Formaldehyde is a water-soluble pungent-smelling gas. It is usually taken in through the air or skin and has cellular and genotoxic effects. In susceptible people, even low concentrations may lead to irritation of mucous membranes and cause allergies. In indoor air, health effects are possible from as little as 0.04 ppm. Above 4 ppm leads to tearing and severe discomfort, above 30 ppm can be fatal. In rooms, according to the German MAK Regulation, a maximum of 0.1 ppm is allowed (http://umweltanalytik.com.lexikon/ing10.htm). In accordance with the Regulation for the Labelling of Hazardous Materials[71] in the EU, the following hazardous properties have been evaluated:

Carcinogenicity, Category 2; H351
Acute toxicity, Category 3, inhalation; H331
Acute toxicity, Category 3, skin contact; H311
Acute toxicity, Category 3, ingestion; H301
Corrosive on skin, Category 1B; H314
Skin sensitisation, Category 1; H317

The labelling must carry the following warnings:

[71] Classification according to GHS Regulation 1272/2008

H351:Suspected of causing cancer.
H331: Toxic if inhaled.
H311: Toxic in contact with skin.
H301: Toxic if swallowed.
H314: Causes severe skin burns and eye damage.
H317: May cause allergic skin reactions.
Formaldehyde is classified as (WGK) 2 "water hazard) in the Water Hazard Classification system[72]. For water organisms, formaldehyde is low to moderately acutely toxic.

According to information from the Federal Insitute for Risk Assessment (BfR) concerning formaldehyde in clothing from June 2007, the substance is regarded as a contact allergen, for which the triggering of allergies even at very low levels in the clothing cannot be completely ruled out. It is one of the most common occupational allergens together with four other substances. More than 20 symptoms caused by formaldehyde are known, from light symptoms like loss of incentive and eye irritations, diarrhoea and bronchitis, through dizziness, behavioural disturbances and depression, to hair loss, memory loss and cancer. According to a BfR Committee, formaldehyde is used in production as a preservative and crosslinking agent. It is also used as a tanning agent, filler and dyeing agent component. Therefore, high accumulation levels of formaldehyde could occur in leather manufacturing. An aldehyde separation from glyoxal and greasing agents is also discussed. There are difficulties in the determination of formaldehyde in leather, e.g. tanning agents affect the analysis, i.e. formaldehyde is either bound or released in the investigation. The BfR recommends adding chemicals that bind the free formaldehyde (e.g. Scavenger). Moreover, the committee also urges the development of standardised exposure and migration models

7.2.2.3 Statutory and Industrial Standards

The formaldehyde content in leather and fur is not subject to specific regulatory or labelling requirements.

Based on the Toys Directive (RL 2009/48/EC) and the European standard series EN 71[73], textile components of toys for children under 3 years of age cannot contain more than 30 mg/kg of formaldehyde (free and hydrolysable). In 2009, the RAPEX rapid alert system of the EU listed formaldehyde contamination in a children's shirt of 106 mg/kg and in a children's dress with 570 to 630 mg/kg. The SVHC list of the EU REACH does not yet include formaldehyde, but it should be proposed by the ETUC, Trade Union Priority List for REACH Authorisation, in the foreseeable future.

The Dutch Wijziging Arbeidsomstandighedenregelung allows 0.15 mg/m³ of formaldehyde in the air at the workplace in an 8 hour average period.

The Swiss ChemRRV refers to the EU Prohibited Chemicals Regulation 76/769/EEC. This states that products with more than 0.2% formaldehyde may not be placed on the market.

[72] Classification for administrative regulation of water-polluting substances (VwVwS); there are three risk classes with class 3 as the highest risk level.

[73] European Standard on Toy Safety

The German Consumer Goods Regulation requires manufacturers to warn consumers of the textiles that they should wash the product before wearing it for the first time from 0.15% formaldehyde in the product.

Indoors, according to the German MAK Regulation, a benchmark limit of 0.1ppm (=0.12mg/m³) may not be exceeded, the occupational exposure limit is 0.6mg/m³, KIII Class B.

The SIN list of the NGOs lists formaldehyde as an alarming substance.

The international Oeko- Tex 100 standard mentions formaldehyde and mentions benchmarks for various applications.

For textile end products, the IVN (International Association of the Natural Textile Industry e.V.) has set a formaldehyde value of 16 mg/kg for textiles ready for sale and 50 mg/kg for leather.

The GOTS Seal names the same values for textiles.

The SG-Symbol for leather and fur products that have been checked for contaminants requires compliance with a max. of 150 mg/kg for furs without skin contact, max. 75 mg/kg for furs with skin contact and articles for children may only have a maximum formaldehyde content of 20 mg/kg[74].

The German RAL- ZU- 154 Textiles allows no formaldehyde in production, it however does not list any benchmarks for any possible residues.

The RAL- ZU- 155 Shoes also does not allow the substance but it names a benchmark for children's shoes.

Reference values for formaldehyde:

REACH/SVHC	Cand.^^
EU SpielzeugR /free hydrolysable	**30 mg/kg (textiles for children under 3 years of age)**
EU WasserrR	0.5 mg/m³
EU RAPEX **Bulgaria**	Alerts from 44.9 mg/kg **30 mg/kg**
GHS	Yes
SIN	Yes °
GOTS	50 mg/kg
IVN	16 mg/kg* (Textiles), 50 mg/kg (Leather)
OEKOTex	16 mg/kg*
ChemRRV CH	0.2%
SpielzeugR Ch	0.05%^

[74] Available from one of the PFI project partners: www.pfi-ps.de/fileadmin/verwaltung/SG-Kriterien_05_2009_D.pdf

AzofarbstV AT	-
BedarfsgV D	**0.15 %: Labelling required (Textiles)**
BfR	**0.05% (500 mg/kg) for labelling requirement**
SG Label D	**150 mg/kg (without skin contact), 75 mg/kg (with skin contact), 20 mg/kg** (children)**
RAL Shoes D	**150 mg/kg (without skin contact), 75 mg/kg (with skin contact), 20 mg/kg+ (children)**
RAL Textiles D	-
6 Countries = EU REACH	EU Directive
COTANCE	-°°
MAK (D)	0.6g mg/m³++
EcoAid	**30 mg/kg (adults)**

6 countries: Austria, Rumania, Bulgaria, The Netherlands, UK, Germany. -= is not present, 1%= 1000 mg/kg, 50mg/kg in leather,*GW infants, adults 75 mg/kg, + children's shoes, ++in air 0.15 mg/m³, ^reporting value, ^^ on the candidate list, ° Substance that needs to be forbidden/replaces, °°is based on REACH/SVHA, does not allow formaldehyde in products.

7.2.3 Boron

This substance was investigated in fur samples in the context of this report.

7.2.3.1 Use

Industrial important boron compounds are Borax CAS 7440-42-8 (sodium tetraborate), boric acid and kernite. They are used in fertilisers, in wood protection, as bleaching agents, and in the manufacturing of glass and porcelain. In leather manufacturing, boron is often used in chromium tanning in the form of borax.

7.2.3.2 Toxicology and the Environment

Boron and its salts were considered to be non-toxic. This has changed with its classification as an SVHC (Substance of Very High Concern) under REACH in 2010. Health problems can occur if swallowed (R22) or through absorption through the skin. Prolonged exposure can cause chronic poisoning, with the substance accumulating in the liver and being deposited in the central nervous system. It seems that there is elevated toxicity with some boron compounds like boron oxides, borates, boranes or the new group of the boronates (http://www.vetpharm.uzh.ch/.../WDK_070.htm).

The borax that is used in the leather industry (CAS 1303-96-4) is classified as follows:

R60, may impair fertility.
R61, may cause harm to unborn children.
S53 avoid exposure
S45 in case of accident or indisposition call a physician
CMR (carcinogenic, mutagenic, toxic to reproductive processes) Cat. 2 (proven in animals, suspected in humans)
LD oral (Rat) 2660 mg/kg, LD dermal (rabbit) 2000 mg/kg
Following absorption: nausea, vomiting, agitation, seizures, cardiovascular disorders and disorders of the CNS.
The occupational exposure limit is (AGW) 0.5 mg/m³. When dealing with borax, protective gloves and a protective mask with a filter must be worn (Safety Data Sheet Carl Jäger GmbH, as of 04.08.2011).

7.2.3.3 Statutory and Industrial Standards

Boric acid is listed in the REACH Regulation; it comes from borax with acid. GHS also lists boric acid. There it is classed as toxic, harmful to unborn children and may impair fertility.

The EU Toy Directive sets limits for boron with different types of toys.

The Gen. Safe. Prod. Reg. from the UK is based entirely on the aforementioned REACH, as well as on the ChemRRV of Switzerland. The Toy Regulation of Switzerland from 2002 is based on 67/548/EEC, the Packaging Directive of the EU. This is a comprehensive listing of approx. 8000 substances which contain various boron compounds that are classified as dangerous and which cause genetic damage in offspring and/or reduce fertility when inhaled, ingested or absorbed through the skin.

The German Regulation on Hazardous Substances sets restrictions in dealing with some lubricants, some of which also contain Boron.

The German Technical Rules for Hazardous Substances (TRGS618) name CKB salts (Chromium-Copper-Boron), which is used as a biocide and is classed as a water hazard.

According to the German Consumer Goods Regulation, boron is only allowed in finished products in a proportion of 8 thousandths of the weight, there is a named limit for boric acid in foods, boron nitride is completely prohibited without a limit.

The SIN list of the NGOs mentions borax, boric acid, various borate and organic boron compounds.

In the industrial standards, only the IVN (Natural Textiles) names various boron compounds that may not be used.

REACH/SVHC	+
EU SpielzeugR	300mg/kg^
EU WasserrR	5mg/++
GHS	
SIN	**
GOTS	-
IVN	-
OEKOTex	-
ChemRRV CH	-

SpielzeugR Ch	-
AzofarbstV AT	-
BedarfsgV D	8mg/kg*
SG Label D	-
RAL Shoes D	-
RAL Textiles D	-
6 Countries = EU REACH	-
COTANCE	-
EcoAid	**10 mg/kg**

6 countries: Austria, Rumania, Bulgaria, The Netherlands, UK, Germany, *in foods, ** called borax, boric acid and div. borides for banning/exchange, + Boric acid and on the candidate list, ++Wastewater Ordinance, ^ in liquid/adhesive toys, 1% = 1000 mg/kg, in Germany it is necessary to inform the consumer about the boric acid content from this level upwards.

7.3 Dyeing Chemicals

A number of dyes that are used in fur production are hazardous both to the health and/or the environment.

7.3.1 Sensitising dispersion dyes

A focus was set on "Sensitising dispersion dyes and carcinogenic dyes in clothing and accessories" in the context of the nationwide monitoring plan of the BVL (2010). In the analyses of the BVL, there were also products made of leather in which high levels of these dyes were found (gloves). The BVL wrote: "For reasons of preventative health, a legally binding regulation of the BfR (2004) and the BgVV (2002) would be desirable, classifying dispersion dyes as sensitising. This is against the background that these dyes are technically unavoidable."

7.3.2 Aromatic amines

The group of azo dyes is very diverse. Some of them are considered to be carcinogenic or possibly carcinogenic. For this reason, azo dyes that according to a particular method release one or more of 22 listed aromatic amines from the Consumer Goods Regulation, are banned in many applications[75]. The azo dyes can be absorbed via inhalation or through the skin and separate in the body into carcinogenic aromatic amines. Although the German Furrier Guild claims that azo dyes are "a thing of the past"[76], it should not be assumed that in principle furs are no longer coloured with these substances, especially in low wage countries. The Bavarian state supervision laboratory LGL found forbidden azo dyes in leather gloves in 2005.

7.3.2.1 Phenylenediamine

This group of substances has been investigated in fur samples in the context of this report. o- phenylenediamine CA S 59-54-5, m-phenylenediamine CAS 108-45-2, p-phenylenediamine CAS 106-50-3.

Oxidation dyes are formed only in the hair with ammonia and hydrogen peroxide. Among them is 1,4-phenylendiamine [106-50-3] or p-diaminobenzene: it is classified in the EU as a hazardous substance as "toxic through inhalation, ingestion and contact with the skin , irritates the eyes, sensitising possible through skin contact, very toxic to aquatic organisms, may cause long-term adverse effect in water courses". It is described as a "frequent and important contact allergen that is of considerable importance with regard to both private and occupational exposure[77]" and is associated with allergic skin irritations for hairdressers and clients that come into contact with it[78]. Its use is restricted according to the Cosmetic

[75] http://bundesrecht.juris.de/bedggstv/anlage_1_22.html

[76] http://www.kuerschner-innung.de/gerben.htm

[77] Diepgen 2009: Para-phenylenediamine – is a frequent and important contact sensitisation being overlooked in Germany? Occupational and environmental dermatology. - 57 (2009), H. 3, S. 91-93 (6 Lit.).

[78] http://www.baua.de/de/Themen-von-A-Z/Gefahrstoffe/TRGS/pdf/907/907-4-aminophenol.pdf?__blob=publicationFile

Directive[79]. Further oxidation dyes are the eye-irritant catechol (or catechol [120-80-9]) and resorcinol. Catechol is possibly carcinogenic in humans. It can cause eczematous dermatitis and disrupt the function of red blood cells. Resorcinol is classified in the EU as "harmful if swallowed, causes severe eye irritation and skin irritation, very toxic to aquatic organisms". The use of this substance is also restricted in accordance with the Cosmetics Directive.[41]

7.3.2.2 Use

The important part is o-phenylenediamine as the initial material with numerous compounds which also include dyes and pigments. m-phenylenediamine is considered a colorant for furs.

7.3.2.3 Toxicology and the Environment

o-Phenylenediamine is classified by the UN labelling of the GHS (Global Harmonised System of Classification and Labelling of Chemicals) as follows (H-statements):

Acute dermal toxicity, Cat. 4, H312, harmful
Acute inhalation toxicity, Cat. 4, H332, harmful
Serious eye damage, Cat. 2, H319, causes severe eye irritation.
Skin sensitisation, Cat.1, H317, strong allergic skin reactions
Bacteria cell mutagenicity, Cat.2, H341, causes presumably genetic defects.
Carcinogenicity, Cat. 2, H351, can probably cause cancer.
Acute water hazard, Cat.1, H400, very toxic to aquatic organisms.
It is recommended that a protective suit be used when dealing with this substance in addition to productive glasses and gloves and it should be disposed of as hazardous waste.
The R-statements are: 20/21-25-36-40-43-69-50/53, which means wide reaching agreement with the H-statements, in addition the suspected reproductive toxicity is mentioned as is the long-term toxicity in water course. With regard to handling, particular S-statements (new P-statements), nominated in o-phenylenphenol: 12-28-36/37-45-60-61. That means collectively from the known facts: Keep out of reach of children, wash immediately and seek medical attention when touched, dispose of as hazardous waste. (R-/s-statement in accordance with www.chemie.de/lexikon/o-Phenylendiamin.html.

m-, p-phenylenediamine

In this application and behaviour, chemicals similar to o-phenylenediamine are classified according to GHS standard as follows:

Acute dermal toxicity, Cat. 3, H311, toxic by skin contact (is reabsorbed)
Acute inhalation toxicity, Cat. 3, H331, toxic by inhalation
Serious eye damage/eye irritation, Cat. 2, H319, causes severe eye irritation.
Skin sensitisation, Cat.1, H317, can cause allergies
Bacteria cell mutagenicity, Cat.2, H341, causes presumably genetic defects and triggers cancer.
Acute water hazard, Cat.1, H400, very toxic to aquatic organisms
Chronic water hazard, Cat.1, H410, very toxic to aquatic organisms with long lasting effects,
Difficult to biodegrade
www.applichem.com.de/.../p-phenyliendiamin; www.Gischem.de/download/0100018-45-000000_1_1_1.PDF

7.3.2.4 Statutory and Industrial Standards

Based on the EU Directive EU 87/548 EEC, the Swiss Regulation of the EDI deals with the safety of toys made in 2002.

[79] The Federal Ministry of Justice under www.gesetze-im-internet.de/kosmetikv/index.html

The Austrian regulation on azo dyes identifies a number of secondary derivatives of phenylene diamines like o- toluidine, 4- methoxy- m- phenylenediamine, 4- chloroaniline or 5- nitro- o- toluidine.

Almost the same substances are identified by the Swiss Regulation of the EDI concerning objects for human contact, with the inclusion of some others like the group of para-phenylenediamine.

The UK General Product Safety Regulation applies to all substance on the RAPEX guidelines of the EU. In this, phenyldiamine and chlorocresol (PCMC) are identified as CMR substances and are therefore classified as being carcinogenic, mutagenic or toxic for reproduction.

The SIN list of the NGOs with 378 (as at Aug. 2011) particularly hazardous substances does not consider phenylenediamines, but closely related derivatives or precursors, like methyl-phenylenediamine, n- nitro- dimethylamine, 6- methoxy- m- toluidine or p- cresidine.

The IVN (Int. Assoc. Natural Textiles) refers to the EU Directive EU 87/548 EEC, where m-phenylenediamine is classified as potentially altering genetic material, following which, according to the IVN, it may no longer be used in production by the member companies.

Reference values for aromatic amines, phenylenediamines, 2- methoxyaniline (o- anisidine) MA, aniline A:

	PDA	MA	A
REACH/SVHC	(0.1%)^^	(30 mg/kg)^^	-°^^
EU SpielzeugR	-	-#	-
EU WasserrR	-	0.5 µg/l`	20 mg/l°°
GHS	-	-+	-+
SIN	-	yes	-
GOTS, Extract	20	20[80]	-
IVN	100 mg/kg**	5 mg/l	100 mg/l
OEKOTex	0.1 mg/kg##	-~	-
ChemRRV CH	-	-	-
SpielzeugR Ch	30 mg/kg~~	-°	-
AzofarbstV AT	-~	30 mg/kg ++	-
BedarfsgV D	0.3 %^^	30 ^^ mg/kg	-^^
SG Label D	**-**	**30 mg/kg**	**-**
RAL Shoes D	0.1%	20 mg/kg^	20 mg/kg^
RAL Textiles D	0.1%	-	
6 Countries = EU REACH	0.1%	30 mg/kg	-°
COTANCE	- ^^	-^^	-^^
EcoAid	**20 mg/kg**	**20 mg/kg**	

6 countries: Austria, Rumania, Bulgaria, The Netherlands, UK, Germany. -= is not present, 1%= 1000 mg/kg, ** Total aniline/o-phenylindiamine, + international safety data sheets required, ++ banned in products, ° suggested by Germany for the SVHC candidate list, according to Swiss Regulation Objects for Human Contact:

[80] arylamines with carcinogenic properties from azo dyes

forbidden, °° toxic for algae 10 mg/l, ^ based on azo dyes, ` so-called lower application limit, # m-phenylenediamine forbidden, ## in the washout test based on o-phenylphenol, ~ this Directive lists various derivatives of phenyldiamine as forbidden substances, ^^ all azo dyes forbidden, ~ forbidden, ~~total value of aromatic amines

7.4 Preservatives

Preservatives are antimicrobial substances. Over a long time the spectrum of the compounds has hardly changed, since it is difficult to find effective substances of low toxicity for both animals and humans. Many are also found in nature, like ethanol, formic acid, eugenol or pine oil. They are used in many different areas of application. In technical products, eight substance groups are especially used: alcohols, aldehydes, acids, phenol derivatives, mustard oils, terpenes and diterpenes as well as benzimidazoles. In particular they protect against moulds that produce aflatoxins and could have a carcinogenic effect. In the preservation of skins and leathers, there are six different types of production or phases, in which different preservatives are used: salted skins, pickling solutions, dry skins, tanning solution, moist chromium leather (storage) and finished leather. The preservatives which were found in the present study are p-phenylphenol and 4-chloro- 3- methylphenol: the former is usually used in the moist chromium leather and finished leather, the second is used in salted skins and pickling solutions (practice of sterilisation, disinfection, preservation, Georg Thieme Vlg.).

7.4.1 Formaldehyde

Formaldehyde and formaldehyde releasing substances can be used as tanning agents as well as preservatives. Formaldehyde is described in more detail in the section for tanning agents.

7.4.2 PCP (Pentachlorophenol), oPP (ortho-phenylphenol)

Chlorophenols have been investigated in fur samples within the context of this report.

PCP has insecticidal and fungicidal properties. Its use is banned in the EU. It became known through its many health damaging effects in wood preservatives ("Wood Preservative Syndrome "). It can be easily taken in through the skin and trigger liver and kidney damage and cause non-specific symptoms like dizziness, nausea and vomiting, depending on the concentration of chloracne. PCP is genotoxic and is classified by the WHO as possibly being carcinogenic to humans. For many of the disease symptoms that were triggered by products containing PCP, contamination by dioxins was probably responsible. PCP is listed on the blacklist of Greenpeace. It is ranked three from the more than 1200 pesticides on the list, which are comparatively assessed and ranked according to their effects on the environment and health, and is therefore one of the top three most hazardous pesticides in the world[81], because it is very strongly acutely toxic, carcinogenic, toxic to reproduction, neurotoxic and endocrine-toxic, has very high toxicity to aquatic organisms, strongly

[81] For the blacklist, more than 20 publicly accessible toxicity and environmental databases were evaluated and each substance was evaluated in 17 categories.

accumulates in the environment and is very persistent. Meanwhile, instead of PCPs, other phenolic compounds are used for preservation, including oPP.

7.4.2.1 Toxicology and the Environment:

o- phenylphenol (1,1`- biphenyl-2-ol, 2- biphenylol, 2- hydroxybiphenyl), CAS No. 90-43-7

R-statements: 36/38, irritating to eyes and skin (= EU classification: Xi). S. statements: (2)-22, Do not breathe dust (keep container closed, keep away from flammable substances).

The substance irritates the eyes, skin and respiratory tract when inhaled or ingested. Reddening of the affected area occurs, followed by coughing, abdominal pain, cramping and dyspnea (strong difficulties to breathe), dizziness and paralysis. Even brief exposure can result in damage to liver, lungs, the heart and circulatory system leading to a circulatory collapse, the gastrointestinal tract and kidneys. (http://gifte.de/Chemikalien/o-Phenylphenol.htm).

7.4.2.2 Statutory and Industrial Standards

o- Phenylphenol: In EU REACH, o- phenylphenol is listed in Annex XVII.

The ChemRRV of Switzerland is based on the Chemical Prohibition Regulation of the EU (see above). Moreover, EU REACH and other relevant regulations apply to all EU countries. What is less relevant here are the Food and Cosmetics Regulations of the EU and the EU countries, in which there are very low limits for o-phenylphenol.

The Global Organic Textile Standard defines a limit. The IVN Natural Leather excludes the use of all chemical preservatives. It only allows cooling and salting. The Oeko- Tex 100 lists no preservatives. In the SIN list of the NGOs, the substance is not listed.

Reference values for o-phenylphenol

REACH/SVHC	0.1%^^
EU SpielzeugR	-
EU WasserrR	-
GHS	-
SIN	-
GOTS (Extract)	1.0 mg/kg
IVN	100 mg/kg
OEKOTex	100 mg/kg
ChemRRV CH	-
SpielzeugR Ch	30 mg/kg~~

AzofarbstV AT	-~
BedarfsgV D	0.3 %^^
SG Label D	**100 mg/kg (50 mg/kg for children)**
RAL Shoes D	0,1% (1000 mg/kg)
6 Countries = EU REACH	0.1%
EcoAid	**50 mg/kg**

7.4.3 PCMC (Chlorocresol)

Other names: (p- chloro- m- cresol, 4-chloro- 3- methyl phenol, Short name: chlorocresol) CAS 59-50-7. PCMC (also chlorocresol) is, despite its allergenic properties, still in use in

many disinfectants. It is also used for the preservation of leather. In one study, the substance was also found in children's shoes (www.kinderfuesse.com.pdf/oekotest/pdf).

PCMC is often used as a leather preservative as a replacement for the substance PCP (pentachlorophenol), which was banned in 1989. It acts as a skin and mucous membrane irritant, is sensitising and has a strong smell.

LD 50 (Rabbit) oral: 1830mg/kg
R21/22: Harmful in contact with skin and if swallowed
R41: Risk of serious damage to eyes
R43: May cause sensitisation through skin contact
R50: Very toxic to aquatic organisms
R39/23/24/25: Toxic, serious risk of irreversible effects through inhalation, ingestion and skin contact
R11: Highly flammable
R50/53: Harmful to aquatic organisms
S26: Wash and consult a physician
S36/37/39: Wear a protective suit, gloves and glasses
S61: Avoid release into the environment
S16: Keep away from ignition sources
S7: Keep container tightly closed
(http://www.chemicalbook.com/ChemicalProductProperty_DE_CB5703115.htm). Accident man assessments of the consequences of workplace accidents, Springer Vlg.).

H302 Harmful if swallowed
H312 Harmful in contact with skin
H317 Can cause allergic reactions
R41 Danger of very serious damage to eyes
R50 Very toxic to aquatic organisms especially fish
P310 Immediately call a physician and the poison control centre
P501 To be disposed of by a specialist company
Chlorocresol may not enter the environment, air or waste water.

Poisoning symptoms can occur up to 48 hours after contact. When dealing with the chemical, at least gloves and protective glasses should be worn. Can decompose into the dangerous gases, hydrogen chloride and carbon monoxide.

Safety information for chlorocresol Carlo Erba Reagents. As of 03.07.2011.

7.4.3.1 Statutory and Industrial Standards

The Canadian Workplace Regulations WHMIS classifies it as medium level toxic.

In the EU, the substance is listed in the regulations for biocides. According to the EU Chemical Prohibition Regulation V 76/769/EEC, chlorocresol is a problem substance but not forbidden. The Swiss ChemRRV is also based on this regulation. According to the German Workplace Regulation, if it is in the air in the workplace then it is classified by the international category IIB, must be reported, but due to the lack of data there are no limits.

According to the IVN Natural Leather, it may not be used. In the Global Organic Textile Standard GOTS, it could be prohibited under the forbidden chlorophenols. In the other textile standards, like other preservatives, it is not mentioned.

7.4.4 Dimethyl fumarate (DMF)

DMF has been studied within the context of the preliminary tests for this report.

DMF is used as a biocide against mildew in clothing, shoes and furniture. The use of it in the EU has been banned since 1998 and has been classified as harmful and sensitising to the skin. At the beginning of 2010, the Federal Institute for Risk Assessment (BfR) reported on leather products that had been imported into the EU (including shoes), in which DMF was added as a preservative or accompanied by it. A "significant number" of consumers came into contact with it through the products, which resulted in "extremely severe allergic reactions" in the form of severe itching, skin inflammation and respiratory distress[82] (BfR 2010). The EU Commission subsequently issued a decision in 2009 that products containing DMF are not allowed to be placed on the market or brought into circulation[83]. In Germany the decision came into force in May last year. DMF is mainly added to leather goods in small sacks ("sachets") together with drying agents, but can also be applied directly to the leather. Under the new rules, these products are no longer marketable and supervisory authorities may, if necessary, issue a recall order.

7.4.5 Organotin compounds

This substance group was investigated in some fur samples within the context of this report.

Organotin compounds are metal-organic compounds containing one or more tin-carbon bonds. They are used as biocides, wood preservatives, plastics additives and catalysts. About 7000 tonnes are used annually in biocides. Their use is declining because they can no longer be used in antifouling paints on ships. They are found in consumer products like toys and textiles, sandals or baking paper and are widespread in the environment, such as in sea water or house dust. Monobutyltin is now used in wood preservatives, pesticides and preservatives (http://umweltdaten.de/publikationen/fpdf-1/2245.pdf).

7.4.5.1 Toxicity and the Environment

Monobutyltin (MBT butyltin 3+) CAS No. 78763-54-9, Subcategory C (GHS): Highly flammable (Flame symbol) is described as follows:

R43: May cause sensitisation by skin contact
R37: Irritating to respiratory systems
R52/53: harmful to aquatic life with long lasting effects
Butyltin hydroxide
R20/21/22: Very toxic by inhalation, ingestion or skin contact
R36/37/38: Irritating to eyes, respiratory system and skin
Butyltin trichloride
H314: Causes severe eye damage and etching
H335: Irritating to the respiratory system
H412: Harmful to aquatic life with long lasting effects
Furthermore, the monobutyltin substances damage the liver, gall bladder and kidneys as well as the development of foetuses.
LD 50 (Daphnia/Fish): 30-40 mg/l, chronic effects of monobutyltin trichloride on daphnia from 16 µg/l.
The monobutyltin compounds accumulate in the food chain. In rats an impairment of the foetuses was observed from 900 mg/kg through daily administration into the food of the mother. A reasonable human toxic

[82] BfR 2010: 2. Meeting of the Committee "Textiles and Leather" of the BfR-Commission for Professional Commodities, Federal Institute for Risk Assessment, Minutes from 19. January 2010

[83] http://ec.europa.eu/belgium/news/090430_consumers_de.htm

threshold is not available for monobutyltin substances. For monobutyltin compounds, there are no European values available for the protection of drinking water. The German Federal Environmental Agency recommends a value of 0.3 µg/l. (L25_db_Monobutylzinn_Datenblatt_UQN-Vorschlag_100315.doc).

In recent years TBT (Tributyltin, CAS-No. 56-35-9) and TPT (Triphenyltin) have proven to be extremely toxic for humans and animals. Here the focus is especially on the damage to the immune system, the reproductive system and unborn children. Since the immune damaging effect of each substance has a similar effect mechanism, simultaneous exposure to both chemicals would likely result in an addition to the effects. Organotin compounds are used in a large number of commodities. In an exposure assessment the Federal Institute for Risk Assessment (BfR) came to the conclusion that some consumer products could release such high amounts of organotin compounds that the tolerable daily intake would be exhausted under worst case conditions. As the consumer doesn't only come into contact with the organotin compounds through consumer products but also through food and the environment, a very high level of contamination is the result[84]. As environmental pollutants, organotin compounds have become known, for example, through the hermaphrodite effect on marine whelks, which were thus made irreversibly infertile and stocks slumped heavily. In addition, the substances are persistent; TBT is banned in antifouling marine paints worldwide since 2003. In the Endocrine Disruptor List of the EU, tributyltin oxide and triphenyltin have been placed in the highest category (1) and are therefore considered hormonally active.

7.4.5.2 Statutory and Industrial Standards

According to the European Hazardous Substances Regulation 67/548/ EEC, monobutyltin is listed in Annex I. Since 09/2006, the substance, like all other organotin compounds in the EU, may no longer be used in biocides.

The Swiss ChemRRV also refers to this EU Directive EU 67/548/EEC. The Swiss Toy Regulation refers to it also as well as to the EC Directive 1199/45 EC as legislation on classification, labelling and packaging of dangerous preparations. The General Product Safety Regulation of Great Britain refers to the Directive 2001/95/ EC relating to product safety and the basis of the EU chemical warning system RAPEX. The German Food and Consumer Goods Legislation LFGB sets a limit for organotin compounds in Paragraph §30 in a total limit of 0.1 µg/kg of body weight per day in human intake.

In the textile standard GOTS, the use of all organotin substances is prohibited, especially monobutyltin (MBT). The standard of the company group Embraco allows MBT with an amount of 0.1% (1000 ppm) in its products. The Oekotex Standard prohibits all organotin compounds, except for MBT. The IVN Natural Textile standard is based on EU 67/548/EEC.

[84] "BfR and UBA recommend further restricting the use of organotin compounds in consumer products." Current joint position No. 032/2008 of the Federal Environmental Agency and the Federal Institute for Risk Assessment from 5 February 2008; updated on 29.5.2008 and on 18.11.2008.

The German TÜV Rheinland defined a limit for MBT in toys of 1 mg/kg following a proposal by Öko- Test. This value was adopted by the SG Symbol for leather goods that have been inspected for contaminants, as well as by RAL- ZU- 155 Shoes, which prohibits the use of all organotin compounds. The RAL- ZU- 154 Textiles permits individual organotin compounds at 1 mg/kg, with only 0.25 mg/kg for tributyltin. Small children should not exceed the daily intake of organotin compounds 10%.

Reference values for monobutyltin (MBT):

REACH/SVHC	-*
EU SpielzeugR	(1.2 mg/kg)+
EU WasserrR	priority
GHS	-
SIN	-
GOTS	0.1 mg/kg
IVN	1 mg/kg
OEKOTex	-
ChemRRV CH	-
SpielzeugR Ch	-

AzofarbstV AT	-
BedarfsgV D	-**
SG Label D	**1 mg/ kg**
RAL Shoes D, Blue Angel	**1 mg/kg**
RAL Textiles D	1mg/kg
6 Countries = EU Directives	-*
COTANCE	-^^
EcoAid	**0,1 mg/kg**

6 countries: Austria, Rumania, Bulgaria, The Netherlands, UK, Germany. GW= Limit, RW= Benchmark, -= is not available, 1%= 1000 mg/kg, * listed, see also EU GefahrstoffV. Particular procedures for proper handling,** according to German Food and Commodities LFGB 0.1 µg/kg body weight /day,* According to EU 2002/72/EC overall migration value for materials in contact with food. According to the SpielzeugR, the use of organotin compounds is forbidden), ^^based on REACH/SVHC (see above)

7.4.5.3 TCMTB 2-(thiocyanomethylthio)benzothiazole

TCMTB, CAS-No. 21564-17-0 is used in the leather and fur industry as a preservative. It is classified in the EU as a hazardous substance as follows: "Fatal if inhaled, harmful if swallowed, causes severe eye irritation, causes skin irritation, can cause allergic skin reactions, very toxic to aquatic life with long lasting effects". The U.S. Environmental Protection Agency EPA has rated it as "possibly carcinogenic". A metabolite of TCMTB was found in European rivers[85].

7.5 Other Substance Groups

7.5.1 AOX (Absorbable Organic Halogens)

This group of substances has been investigated in fur samples within the context of this report.

AOX is a collective term for a large number of aromatic and aliphatic halogenated organic substances which, because of their numbers and changing compositions, cannot be listed.

[85] Larisa et al.: A Wood Preservative Metabolite in River Water, Environ Sci & Pollut Res 12 (1) 8 – 9 (2005)

They range from highly toxic furans up to non-toxic iodinated pharmaceutical substances. They are analysed as a collective parameter, whereby some like e.g. chlorobenzene or acid are rarely covered. i.e, there can be even more halogenated substances in the samples than are actually measured. Most AOX are persistent and accumulate in sediments and also in organisms. AOX play a central role in assessing the water quality.

AOX values were included in the tests performed to determine evidence of possible high payloads of halogenated organic substances in fur products. In such cases, a follow-up investigation may identify the exact cause.

7.5.1.1 Use

AOX usually form as a result of industrial processes, especially in chemical plants as pollutants and emissions. In particular, the paper and pulp industry contributed to the contamination of water with chlorine bleach in the past. AOX also occur in high temperature processes and waste incineration. AOX occurs in great amounts in sewage sludge on fields. Its content may not exceed 500 mg/kg dry matter.

AOX findings can also be triggered by halogenated chemicals which were added to the products. These include chlorinated solvents, disinfectants and cleaning agents, dyes and others. AOX are ubiquitous and found in low concentrations up to 0.1 mg/l even in rainwater. www.umweltdatenbank.de

7.5.1.2 Toxicology and the Environment

The range of toxicity from AOX ranges based on individual substances from non-toxic to extremely toxic, like e.g. dioxine, which can cause various amounts of damage in the human organism from chloracne to death. In general, the organic halogen compounds are among the most toxic chemicals in the environment with particularly high relevance. The introduction of halogens into an organic substance increases the lipophilicity and biological activity and thus their toxic potential. The generally tend to accumulate in the food chain. The usually degrade slowly microbiologically. Of particular ecotoxicological importance are the organohalogenic pesticides, which tend to be persistent, accumulative and toxic and are intended to be discharged into the environment. Many halogenated organics are mutagenic or carcinogenic. Halogenated organic compounds constitute a large part of the priority compounds, for which the environmental quality standards of the EU Water Framework Directive were set. In 1990 the collective parameters for AOX in Germany were added to the list of pollutant parameters in accordance with §3 of the Waster Water Charges Act. Most of the information in this section came from www.hlug.de/fileadmin/dokumente/wasser/.../AOX.pdf.

7.5.1.3 Statutory and Industrial Standards

Numerous individual halogenated substances are on the RAPEX/GHS lists of the EU. The Water Framework Directive 2000/60/EC of the EU lists organic halogen compounds as one of 12 group parameters which are subject to emission limitations and are to be gradually cut back. 0.2 mg/l is already considered to be heavily contaminated.

According to the German Waste Water Tax Regulation, from the introduction of 0.1 mg/l upwards dues must be paid. The German Drinking Water Regulations define a limit of 0.01 mg/l.

Various individual substances are also especially found on the A-list of the Dutch Wijziging Arbeidsomstandinghedenregeling of 2006 with the corresponding limits for emissions in the workplace, which for the individual substances are set at one thousandth of a mg/m³. Ácording to the Swiss ChemRR Regulation, halogenated organic compounds may not be placed on the market, especially in the production of leather goods.

The German Hazardous Substances Regulation of 2010 lists some halogenated organic substances which are forbidden and some which are strongly restricted in their application.

GOTS (Global Organic Textile Standard) lays down a benchmark value for AOX.

The IVN Int. Assoc. of Natural Textiles generally doesn't allow the use of halogenated organic substances and is thus the most stringent industrial standard in this respect.

Numerous chlorine organic compounds can be found on the SIN list of the NGOs.

The RAL- ZU- 154 Textiles (Seal "Blue Angel") prohibits chlorine bleach and halogenated carriers. The RAL- ZU- 155 Shoes prohibits chlorinated benzenes and toluenes and sets a limit.

The German SG- Symbol for leather products also set a cumulative limit and allows the individual substance pentachlorophenol (PCP) with a limit of 0.5. mg/kg.

Reference values for AOX (absorbable organic halogens), organochlorine total value:

REACH/SVHC	-
EU SpielzeugR	-
EU WasserrR	0.2 mg/l
GHS	(250 ppm+)
SIN	++
GOTS	**5mg/kg**
IVN	1
OEKOTex	-
ChemRRV CH	^

SpielzeugR Ch	-
AzofarbstV AT	-
BedarfsgV D	^^
SG Label D	-
RAL Shoes D	-
RAL Textiles D	5 mg/kg
6 Countries = EU REACH	-
COTANCE	-
EcoAid	**5 mg/kg**

6 countries: Austria, Rumania, Bulgaria, The Netherlands, UK, Germany. -= is not present, + UNEP benchmark for textile fibres, ++ lists diverse individual AOX and calls for their ban/replacement, ^ lists only a very high benchmark for compost, ^^ lists some AOX substances without naming limits, AOX may also not occur in production or be discharged into the sewage.

7.5.2 Chlorinated Paraffins

This group of substances was investigated in fur samples within the context of this report.

Short chain (SCCP): CAS No. 85535-84-8, medium chain (MCCP): 85535-85-9, long-chain (LCCP): 85535-86-0

The chlorinated paraffins are a controversial group of chemicals as they have been relatively randomly divided into three groups, short-chain (SCCP), medium chain (MCCP) and long-chain (LCCP) and for a long time it was claimed that only the short-chain substances were toxic and e.g. carcinogenic. Recently, high toxicity has also been found in the long chain chlorinated paraffins. The Environmental Committee of the German Bundestag has determined, after analysis of studies, that division into these three groups is not tenable.

7.5.2.1 Use

Chlorinated paraffins are mixtures of substances which are produced by chlorination of paraffins with carbon chains between C10 and C38 and chlorine content between 30 (10) and 72% (average 35%). They are chemical and light resistant, have relatively low volatility and low flammability (from 200°C) and are divided based on their chain length into short-chain (C10–13), medium-chain (C14–17) and long-chain chlorinated paraffins (C>17). Chlorinated paraffins are used as plasticisers in, among others, plastics (PVC), paints and coatings, waterproof impregnations, in sealants and glazing as well as a flame retardant additive in textiles, plastics and rubber and as a greasing replacement agent for leather and fur products. The later mainly occurs outside of Europe where mainly short-chain chlorinated paraffins are used, but also possibly short medium-chain representatives as well, as was already discovered in the report "Poison in the Furs" in 2010[86]. http://www.gaea-umweltconsulting.de/service/.../chlorparaffine/index.html, Handbook for the Environment, 6th Ed. 2006).

7.5.2.2 Toxicity and the Environment

- Short-chain chlorinated paraffins (SCCP)

Short-chain chlorinated paraffins have high chronic toxicity to aquatic organisms (daphnia, algae, fish) and are classified as being environmentally hazardous. They are regarded as being carcinogenic (Cat. 2). The substance group of the SCCP is identified as "agents with reasonable suspicion of carcinogenic potential". They are persistent, fat-soluble and accumulate in the food chain.

- Medium chain chlorinated paraffins (MCCP)

MCCP are persistent in the OECD Screening Test, persistent in the environment, very bioaccumulative in the fish test (BCF>1000). They accumulate in fatty tissues, kidney and the liver. MCCPs have a very toxic effect on aquatic organisms (R50)
In the EU, a draft risk assessment (RA MCCP 03) of MCCPs has been done. A similar classification to the SCCPs therefore appears justified.
Hazards:
R64: May cause harm to breastfed babies.
R66: Repeated exposure caused eczema

[86] http://www.gaea-umweltconsulting.de/service/.../chlorparaffine/index.html, Handbook for the Environment, 6th Ed. 2006)

Environment:
N: Dangerous for the environment
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects
MCCPs like all CCPs must be disposed of as hazardous waste[87].

- Long-chain chlorinated paraffins (LCCP)

In 2001, the German Bundestag asked the EU to increase investigation of MCCP and LCCP. The German Social Accident Insurance has also listed LCCPs in its list of hazardous substances of the BGIA Reports 2009, which is based on the GHS list of the UN. Basically, due to the production process, LCCPs get contaminated by the more toxic SCCPs. (www.rihassas.eu/svhcdienstinfo.php).

7.5.2.3 Statutory and Industrial Standards

The regulations of the EU and individual countries in Europe and the industrial standards in Europe are mainly for short-chain chlorinated paraffins. The GHS list contains all three chlorinated paraffin groups, so safety data sheets also must be created. REACH lists SCCPs as being particularly alarming, especially as these are seen as PTB (persistent, toxic, bio-accumulative). According to REACH-VO E1907/2006) CCPs may still be used as fat replacers in some cases up to 10,000mg/kg.
The use of short-chain SCCP is prohibited by the Swiss ChemRRV and a prohibition has been placed on their importation into Switzerland since 2005.

The Oeko-Tex Standard 100 lists the SCCPs with a limit.
The IVN Natural Textile, combined with the IVN Natural Leather, lists only SCCPs with a limit, but prohibits all substances that are carcinogenic, mutagenic or harmful to embryos, and which are almost not or not biodegradable or accumulate in breast milk or tissues. The SIN list (Substitute It Now) contains short-chain chlorinated paraffins. The German RAL-ZU- 155 Shoes prohibits short-chain chlorinated paraffins in production, but still sets an astoundingly high threshold limit. The German SG- Symbol (Leather Products that have been investigated for contaminants) decidedly lists SCCPs as inadmissible and sets a benchmark of 1000 mg/kg.

Reference values for short-chain chlorinated paraffins (SCCP). These reference values are also applied to medium chain chlorinated paraffins within the context of this report:

[87] www.toxcenter.de/stoff-infos/C/Chlorparaffine.pdf, www.schadstoffberatung.de/chlorpar.htm.

REACH/SVHC	+
EU SpielzeugR EU WasserrR	- -*
GHS	-
SIN	-
GOTS	-
IVN	100 mg/kg**
OEKOTex ChemRRV CH	-
SpielzeugR Ch	-+

AzofarbstV AT	-
BedarfsgV D SG Label D	- 1000 mg/kg++
RAL Shoes D	1000mg/kg
RAL Textile D	-
6 Countries = EU REACH	-+
COTANCE	-
EcoAid	**100 g/kg (all chlorinated paraffins)**

6 Countries: Austria, Rumania, Bulgaria, the Netherlands, UK, Germany. GW= limit, RW= benchmark, -= is not present, 1%= 1000 mg/kg, * highly toxic to aquatic organisms according to EU 1272/2008/EC, requiring reduction in surface waters according to the EU 793/93/ EEC AltstoffV, ** short chain CP, + Previously only short chain chlorinated paraffins SVHC list, from Norway to the EU EFTA pending ban, ++ Total approximate value

7.5.3 Polycyclic Aromatic Hydrocarbons (PAH)

This group of substances has been investigated in fur samples within the context of this report.

7.5.3.1 Use:

Among the PAHs are mixtures of several hundreds of individual substances with a similar basic structure, i.e., at least two organically bound ring systems. PAHs occur as essential components of toluene products like asphalt products or tar oils and are a component of fossil fuels (mineral oil, coal). In addition, PAHs always occur when organic materials are raised to high temperatures (min. 400 to 1,500 °C) in an oxygen deficient environment. They can occur in various consumer products (e.g. tools, bicycle grips, shoes) if e.g. particular plasticisers or carbon black are used in the manufacturing. Some of the PAHs are known to be carcinogenic. This is especially true for skin contact and inhalation. Low PAH contamination is probably in most materials, as a result of combustion processes, PAHs occur ubiquitously. In house dust in living rooms, a total of up to 4 mg/kg (non-smoking household) or 10 mg/kg PAHs (smoking household) have been proven. (The World of the Polycyclic Aromatics, Lehmanns Media 2007). In the present study, eight different PAHs have been found, including four that were in notable concentrations: naphthalene, phenanthrene, fluoranthene and pyrene.

7.5.3.2 Toxicity and the Environment

Naphthalene CAS No. 91-20-3 smells like mothballs, is poorly soluble and is described as follows:

Suspected carcinogenic. The maximum indoor air concentration should not exceed 50 mg/m³. Water hazard Class 3.
R: 22-50/53 Harmful if swallowed, very toxic to aquatic organisms, may cause long-term adverse effects in water.
S: 1/2- 36/37- 46-60-61 Avoid inappropriate use, wear protective clothing, consult a physician if swallowed, dispose of as hazardous waste, avoid releasing into the environment (Priority substances of the Water Directive, Data sheet No. 28: PAH).

Phenanthrene CAS No. 85-01-8:

R 38: Irritating (= Xi) ,seek medical attention
P280: Wear protective clothing, face protection
In case of fire, compressed air breathing apparatus must be worn. Avoid dust and aerosols.
MAK = Maximum workplace concentration Section III: Potentially carcinogenic
(Safety data sheet Carlo Erba Reagents: Phenanthrene).

Fluoranthene CAS No. 206-44-0:

According to the EU Water Framework Directive a priority substance, water hazard Class 2 (medium). Odourless, insoluble, persistent, high accumulation value of all PAHs in sediments and water organisms (1700 fish, 10,000 snails).
LD 50 rats: 16 g/kg, LD 50 Blue Sunny Perch: 4 mg/l
R 21/22-68: Harmful when swallow or in contact with the skin, irreversible damage possible
S 22-24/25-36/37: Do not breathe dust, avoid contact with the skin and eyes, wear protective clothing
(Priority substance of the Water Framework Directive, data sheet No. 28: PAH)

Pyrene CAS No. 129-00-0:

Pyrene is photosensitising and phototoxic. Carcinogenicity group 3 (not classifiable). Medium water hazard Class (2). Like all PAHs, it is subject to the POPs-UN/ECE Protocol with a commitment to an annual reduction.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects
According to the U.S. Water Quality Index, it must not exceed 0.83 mg/l in water containing fish for consumption. It is considered to be readily biodegradable. Very high accumulation values. In mussels up to 38,000 times, in fish up to 98,000 times (Lawa Experts "Substances", Material data sheet: Pyrene).

7.5.3.3 Statutory and Industrial Standards

At the EU level, valid for many Member States as well as Germany, there are no binding limits for PAHs in products. Only for car tires is there an EU limit of 10 mg/kg for carcinogenic PAHs. In the EU there is a limit proposal by Germany of 0.2 mg/kg. In addition a regular limitation method and a new risk analysis should be performed. The German Federal Environmental Agency is also working to list PAHs as an especially alarming substance group in the SVHC list within the framework of the European Chemical Regulation REACH. Likewise, labelling and information requirements are demanded for consumers. The EU Toy Directive should also be reformulated in this way. The EU Commission has announced an amendment (http://www.umweltbundesamt.de/chemikalien/pak/index.htm).

Reference values for Polycyclic Aromatic Hydrocarbons (PAHs)

REACH/SVHC	(100mg/kg)* (1 mg/kg)*
EU SpielzeugR	1 mg/kg°
EU WasserrR	0.2 µg/l°°
GHS	Yes
SIN	-++
GOTS	10mg/kg[88] 1 mg/kg for single compounds
IVN	5 mg/kg (16 PAH according to the EPA), 0.2 mg/kg for carcinogenic PAHs of the Category K1B)
OEKOTex	10 mg/kg (Total of the PAHs) 1 mg/kg (Benzo(a)pyrene)
ChemRRV CH	4 mg/kg^^
SpielzeugR Ch	10 mg/kg#
AzofarbstV AT	-
BedarfsgV D	=REACH/ SVHC
SG Label D	**10 mg/kg total value, 1mg/kg**** [89]
RAL Shoes D	-^
RAL Textiles D	-
6 Countries = EU REACH	= EU Directive (see above)
COTANCE	According to REACH
BfR (D)	**0.2 mg/kg (carcinogenic PAHs)+**
EcoAid	**5 mg/kg (Total value); 0.2 mg/kg for carcinogenic PAHs**

6 countries: Austria, Rumania, Bulgaria, The Netherlands, UK, Germany. GW= limit, RW= benchmark, -= is not present, 1%= 1000 mg/kg,* limit for tire total value,** limit for Nenzo(a)pyrene, the EU proposed value of the German Federal Office for Risk Assessment, calls for bans/replacement on single PAH, ++for individual PAH substances, ^PAHs in skin contact max. 30 sec., ^^for compost, °from 2013, °°according to 75/440/EEC OberflächenwasserR., # in cosmetics according to EU Directive 76/768/EEC

7.5.4 DDT and Metabolites

This substance was investigated in fur samples in the context of this report.
DDT (1.1-(4.4`- Dichlorophenyl)-2-2-2- trichloro- ethane)

[88] Total of: Chrysene, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, Dibenzo[a,h]anthracene, Naphthalene,Acenaphthylene, Acenaphthene, Fluorene,Phenanthrene, Anthracene, Fluoranthene,Pyrene, Indeno[1,2,3-cd]pyrene, Benzo[g,h,i]perylene.

[89] According to the US EPA 16 PAHs are listed: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, Dibenzo[a,h]anthracene, Benzo[g,h,i]perylene, Indeno[1,2,3-cd]pyrene as well as 8 PAHs according to Directive 2005/69/EC: Benzo[a]pyrene, Benzo[e]pyrene, Benzo[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[j]fluoranthene, Benzo[k]fluoranthene, Dibenzo[a, h]anthracene

CAS No. 50-29-3 (Derivatives have their own CAS numbers – see below)

7.5.4.1 Use

For decades DDT was the classical contact and ingested insecticide and was used extensively worldwide especially against the Anopheles Mosquito (Malaria), but also in temperate zones in the agricultural sector and the forestry sector, e.g. against the potato beetle or the foliage eating spider. Today, according to the Stockholm Convention of the United Nations[90], it is forbidden worldwide and may only be used in special situations in some African and Asian countries to combat malaria. In 2005, 6300 tonnes/year were still being produced, two thirds in India and one third in China. There are diverse isomers of DDT and metabolites, some of which are always present as contaminants, like o,p`- DDT (CAS 789-02-06), which has a strong estrogenic effect. The ban on DDT was mainly due to its adverse environmental effect, it accumulates in fatty tissues e.g. in seals and destroys the egg shells of many bird species which were thereby threatened with extinction (Handbook of Chemistry, Vlg. H. Deutsch, Thieme Chemistry: RömpOnline – Version 3.4.).

7.5.4.2 Toxicity and the Environment

DDT acts mainly on the peripheral nervous system, causing hyper excitability and paralysis. Nerve cells "fire" uncontrollably, muscles contract and produce tremors (shaking). It destroys the synapses of the nerve endings in insects leading to their slow death. Since 1946, resistance to DDT has been known. In 1949, stable flies were up to 50% resistant in many European countries. This is true today for the malaria mosquito in parts of Mexico, India and El Salvador, in Africa, the Anopheles mosquito is up to 64% resistant according to a sample taken by the UNEP in 2007.
In humans the highest dose that someone managed to survive was 285 mg/kg body weight. The LD (rats, oral) is 25mg/kg. Tongue numbness, dizziness, twitching of facial muscles, convulsions and paralysis occur in acute poisoning. The carcinogenicity of DDT is controversial. DDD and DDE, the breakdown products of DDT, are partially more toxic than DDT itself. Long-term studies of rats, mice and hamsters showed tumours in the liver, lungs and lymphatic system. The half-life of degradation or expulsion of DDT from the human body is one year. A genotoxic effect is suspected, as is the induction of premature labour. DDT acts like estrogen. Its endocrine effect is the cause of reproductive disorders in various organisms, particularly birds (eggshell thinning). Between 38 and 647 mg/kg of DDT was found in the adipose tissue of people who handled DDT.

DDT degrades slowly in nature and it usually degrades into the very durable DDEs (CAS 82413-20-5, 3424-82-6) and DDDs (CAS 53-19-0, 93952-1802). In the atmosphere it is transported over long distances and passes through rain back into the soil or water. DDT and its derivatives are lipophilic and therefore accumulate in fatty tissue.

[90] http://chm.pops.int/default.aspx

7.5.4.3 Statutory and Industrial Standards

Since DDT is largely banned under the Stockholm Convention, it is curiously no longer decidedly mentioned in some regulations and standards, e.g. in the SIN list of the NGOs. A prohibition on usage can be partially derived from the laws of the EU and EU countries and in the industrial standards based on the characteristics of DDT (e.g. bio-accumulative, environmentally harmful, suspected carcinogenicity, etc.).
The EU Water Framework Directive (WFD) EU considers DDT as the most dangerous substance with respect to water pollution.
DDT is not allowed under EU Pesticide Regulations, according to REACH the use of DDT is prohibited.
In the EU countries, the relevant EU regulations and the stipulations of the Stockholm Convention apply to DDT and its derivatives.
According to the German Hazardous Substances Regulation of 2010, DDT and its derivatives are forbidden due to their toxicity.
According to the Swiss ChemRRV, DDT is forbidden in manufacturing and imports without exception, the same applies to its derivatives DDE and DDD, which are also expressly named.

According to the textile standards GOTS and IVN, DDT and its derivatives are prohibited due to their harmful properties and provide a relatively strict overall limit for halogenated substances.
Also according to the criteria of the natural textile standards, DDT and its derivatives are forbidden in manufactured and imported products.
The Oeko-Tex Standard lists DDT as a chemical that is excluded from use, but doesn't mention a benchmark limit.
The SG Symbol for leather products that have been investigated for contaminants, lists DDT, DDD and DDE as not being acceptable in its products, but only names an overall benchmark value for chlorinated phenolic chemicals.
The RAL- ZU- Textiles is based on REACH. Thus DDT would be a substance that must not exceed 0.1% based on the weight of the product.
The RAL- ZU- Shoes points out that the treatment of leather during storage or transport is not permitted. Bioactive substances are not permitted according to 98/8/EC, which is reflected in this RAL. Chlorophenolic compounds are not allowed by this RAL and are limited through an overall benchmark value.

Reference values for DDT (1.1- (4.4`- dichlorophenyl)-2-2-2-trichloro-ethane (DDT):

REACH/SVHC	yes*
EU SpielzeugR	-
EU WasserrR	0.1 µg/l°°

GHS	yes^
SIN	-
GOTS	0.1 mg/kg+
IVN	0.1 mg/kg+

OEKOTex	1.0 mg/kg++
ChemRRV CH	-°
SpielzeugRCh	-
AzofarbstVAT	-
BedarfsgV D	0.01 mg/kg**
SG Label D	1 mg/kg#
RAL Shoes D	-##

RAL Textiles D	0.1%~
6 Countries = EU REACH	In accordance with EU Directives
COTANCE	-
EcoAid	

6 countries: Austria, Rumania, Bulgaria, The Netherlands, UK, Germany, 1% = 1000 mg/kg,*forbidden, on the notification list of the UN Stockholm Convention and according to EU R850/2004, ** Values for food according to EU LebensmittelR and the German ChemikalienverbotsV Manufacture/Import forbidden, + based on insecticide substances, for babies, adults 2.0 mg/kg, DDT is forbidden, °°in surface water, ^outlawed by the UN POPs convention, total value of pesticides prohibited, ## forbidden according to the SVHC/REACH negative list

8 Investigated Fur Products

From 17.02. – 29.04.2011, employees from the animal welfare organisation FOUR PAWS bought in retail shops, or ordered online, 35 sample furs in Austria, Switzerland, Germany, Great Britain, Bulgaria, the Netherlands and Rumania. These included furs from foxes, minks, raccoon dogs, rabbits and a seal.

Species – (following verification by DNA analysis of suspected cases of incorrect labelling)[91]	**Number of samples**
Fox	13
Mink	4
Raccoon dog	16
Seal	1
Nutria	1
Rabbit (in combination with one of the other named animals)	*2*

8.1 The supply chain of the investigated furs:

8.1.1 Countries of the fur farming

The site in which the fur-bearing animals were kept was only able to be determined in some cases for the investigated products. The origin information is summarised as follows:

Country of the fur farming	**Number of samples**
Finland	5
China	3
Rumania (According to oral information)	2
Turkey, Scandinavia, Canada (presumed), Finland (presumed)	1
Unknown	21

[91] See chapter: Verification of the information on the fur products concerning the species / 8.2

8.1.2 Countries in which the furs were processed

Processing country	Number of samples, each
China	6
Turkey	5
Italy, Rumania(According to oral information)	2
Indonesia, Austria, Canada, Switzerland, Bangladesh, France, Finland(presumed)	1
Unknown	14

8.1.3 Countries in which the end products were bought and sold

Land	Species	Number of samples	Total
Austria	Fox	1	7 (Sample 7 contains rabbit as well as raccoon dog)
	Raccoon dog	6	
	Rabbit	1	
Switzerland	Raccoon dog	2	7
	Mink	2	
	Fox	3	
Germany	Raccoon dog	3	7 (Sample 23 contains rabbit as well as fox)
	Rabbit	1	
	Fox	4	
Bulgaria	Seal	1	4
	Mink	1	
	Fox	2	
The Netherlands	Fox	1	3
	Raccoon dog	2	
Great Britain	Raccoon dog	3	5
	Mink	1	
Rumania	Nutria	1	2
	Fox	1	

8.1.4 Retailers in which the fur products were sold

The furs came from a total of 31 different retailers:

Retailer	KLEIDER BAUER Austria	DOHNAL im STEFFL Austria	BURBERRY Austria	SPORTALM Austria	DREAM FASHION Austria	SLUIS LEDER Austria
Number of samples	1	2	1	1	1	1

Retailer	MAX MARA Switzerland	MODISSA Switzerland	DUBLANC Switzerland	KOHLER Switzerland	SOPHYS BALE Switzerland	OCH SPORT Switzerland
Number of samples	1	1	2	1	1	1

Retailer	BURBERRY Germany	BREUNIGER Germany	WÖHRL Germany	BAZAR ROYALE Germany	KOOKAI Germany	AIRFIELD Germany
Number of samples	1	1	1	1	1	1

Retailer	NICKI's Germany	HARRODS Great Britain	BURBERRY Great Britain	MADELEINE Great Britain	BROWNS Great Britain	BURBERRY The Netherlands
Number of samples	1	1	2	1	1	1

Retailer	GUCCI The Netherlands	LEDER PALEIS The Netherlands	VERSIS Bulgaria	BILIS Bulgaria	ALFA FURS Bulgaria	POSH MARKET Rumania
Number of samples	1	1	1	1	2	1

Retailer	VERONESSE Rumania
Number of samples	1

8.2 Verification of the information on the fur products concerning the species

(Contributed by Thomas Pietsch, FOUR PAWS Animal Welfare Foundation, Hamburg)

For seven of the fur products there were ambiguities and doubt concerning the information provided by the manufacturer or the salesperson about the species of animal used: In five cases, false labelling was suspected (04DE, 03AT, 07AT, 04UK, 03NL). In one case a label was completely missing (06AT), in another sample the information concerning the species used was requested from a mail order company employee (07DE).

FOUR PAWS had these fur samples inspected by the Saarbrücken analysis laboratory Genefacts using the SIAM method (Specific Identification of Animals by MALDI-TOF mass spectrometry[92]) to determine the species. The test results confirmed the suspected false information or misinformation in all cases.

The inspected samples were actually fur from raccoon dogs. In six cases the products were sold as raccoon fur based on the label or a statement from the employee. Although raccoon dogs and raccoons have similar names in English, they are in fact completely different species and not even remotely related to each other. In another case (06_AT) there was no information available at all regarding the species. The sample also proved to be raccoon dog.

Sample	Test result	Species …	..according to product information
04_DE	**Raccoon dog**	Racoon	The label on the sample
07_DE	**Raccoon dog**	Racoon or coyote	Via telephone from a mail order company employee
03_AT	**Raccoon dog**	Racoon	The label on the sample
06_AT	**Raccoon dog**	No information	
07_AT	**Raccoon dog**	Racoon	The label on the sample
04_UK	**Raccoon dog**	Racoon	The label on the sample
03_NL	**Raccoon dog**	Racoon	The label on the sample

8.3 Overview of the Samples

The table below lists all of the samples that were investigated for this report. Based on the sample numbers in column two, the analysis results can be clearly assigned to the samples in the following chapters. Seven garments were children's clothes.

[92] http://www.gene-facts.com/html/siam.html

No.	Sample number	Information about the species	Article description incl. name of the fashion label	Retailer	Country of purchase	Processing country	Origin / Fur farm
1	01-AT H4674 FT – 8	Fox	Micro fibre jacket BASLER	KLEIDER BAUER	Austria	Unknown	Unknown
2	02-AT H4674 FT – 9	Raccoon dog	Ski Overall 9-12 months MONCLER / Children's clothes	DOHNAL im STEFFL KIDS FLOOR	Austria	China	Unknown
3	03-AT H4674 FT – 10	According to the label: Raccoon. This is obviously a false statement. According to species testing the fur comes from a raccoon dog	Winter jacket Size 104 FRIEDA & FREDDIES / Children's clothes	DOHNAL im STEFFL KIDS FLOOR	Austria	Unknown	Unknown
4	04-AT H4674 FT – 11	Raccoon dog	Blisland QF, XL Khaki BURBERRY	BURBERRY Designer Outlet Parndorf	Austria	Turkey	Finland
5	05-AT H4674 FT – 12	Raccoon dog	Cindy with fur, Vest SPORTALM KITZBÜHEL	SPORTALM Exklusiv	Austria	Austria	Unknown
6	03-AT H4674 FT – 13	No information. According to species testing the fur comes from a raccoon dog	G. Giacci Danza 12 year/152cm DIADORA	DREAM FASHION Outlet GmbH	Austria	China	Unknown
7	07-AT H4674 FT – 14	According to the label: Rabbit and raccoon. This is obviously a false statement. According to DNA testing the fur comes from rabbit and raccoon dog	Concept vest SLUIS LEDER	SLUIS LEDER Factory GmbH	Austria	Unknown	Unknown
8	01-BG H4821 FT – 7	Fox (to pony jacket)	Fur jacket with fur collar MODESTIA	VERSIS	Bulgaria	Unknown	Unknown
9	02-BG H4821 FT – 8	Mink	Fur cap	ALFA FURS	Bulgaria	Unknown	Unknown
10	03-BG	Seal	Fur cap	BILIS	Bulgaria	Presumed	Unknown

No.	Sample number	Information about the species	Article description incl. name of the fashion label	Retailer	Country of purchase	Processing country	Origin / Fur farm
	H4821 FT – 9					Greece	
11	04-BG H4821 FT – 10	Fox	Fur cap	ALFA FURS	Bulgaria	Unknown	Unknown
12	01-CH H4674 FT – 15	Raccoon dog	Cap MAX MARA	MAX MARA	Switzerland	Italy	China
13	02-CH H4674 FT – 16	Fox	Down coat MODISSA	MODISSA	Switzerland	Unknown	Unknown
14	03-CH H4674 FT – 17	Fox	Fox boa GIORGIO PASSIGATTI	DUBLANC	Switzerland	Unknown	Unknown
15	04-CH H4674 FT – 18	Mink	Mink tail DUBLANC	DUBLANC	Switzerland	Unknown	Unknown
16	05-CH H4674 FT – 19	Mink	Mink hat KOHLER	KOHLER	Switzerland	Switzerland	Scandinavia
17	06-CH H4674 FT – 20	Raccoon dog	Children's jacket WOOLRICH / Children's clothes	SOPHYS BALE	Switzerland	China/Italy	China
18	07-CH H4674 FT – 21	Fox	Children's jacket POIVRE BLANC / Children's clothes	OCH SPORT	Switzerland	Bangladesh/ France	Unknown
19	01-DE H4674 FT-1	Fox	Collar LDS Fur collar BURBERRY	BURBERRY	Germany	Turkey	Finland
20	02-DE H4674 FT-2	Raccoon dog	Scarf / Collar YVES SALOMON	BREUNINGER	Germany	Unknown	Unknown
21	03-DE H4674 FT-3	Fox	Fur collar PUMPKIN	WÖHRL	Germany	Unknown	Unknown
22	04-DE H4674 FT-4	According to the label: Raccoon. This is obviously a false statement. According to species testing the fur comes from a raccoon dog	Leather jacket OAKWOOD	BAZAR ROYALE	Germany	Unknown	Unknown
23	05-DE H4674	Fox and Rabbit	Gilet vest Noir T3	KOOKAI	Germany	China	Unknown

No.	Sample number	Information about the species	Article description incl. name of the fashion label	Retailer	Country of purchase	Processing country	Origin / Fur farm
	FT-5		KOOKAI				
24	06-DE H4674 FT-6	Fox	Down jacket with fur hood AIRFIELD	AIRFIELD	Germany	Unknown	Unknown
25	07-DE H4674 FT-7	No information on the product. According to information received via telephone (requested by FOUR PAWS) the fur is either raccoon or coyote. This is obviously a false statement. According to species testing the fur comes from a raccoon dog	Jacket, 10, ink NAPIJRI / Children's clothes	NICKI'S online	Germany	China	Unknown
26	01-NL H4674 FT – 22	Raccoon dog (same item number as in sample 33)	Collar LDS Fur Collar 5045318448422 BURBERRY	BURBERRY Netherlands	The Netherlands	Turkey	Finland
27	02-NL H4674 FT – 23	Fox	Scarf GUCCI	GUCCI Netherlands	The Netherlands	Italy	Finland
28	03-NL H4821 FT – 1	According to the label: Raccoon. This is obviously a false statement. According to species testing the fur comes from a raccoon dog	Children's jacket Fur hood lining NICKELSON / Children's clothes	LEDER PALEIS	The Netherlands	China	Unknown
29	01-RO H4821 FT – 11	Fox	Fur collar "Esfara Dama" CHRONOS ART	POSH MARKET	Rumania	Rumania(from oral information)	Rumania (from oral information)
30	02-RO H4821 FT – 12	Nutria	Fur vest model 128/1555 CHRONOS ART	VERONESSE	Rumania	Rumania(from oral information)	Rumania (from oral information)
31	01-UK H4821 FT – 2	Mink	Hat ANDRÉ / HARRODS	HARRODS	Great Britain	Canada	Presumed Canada

No.	Sample number	Information about the species	Article description incl. name of the fashion label	Retailer	Country of purchase	Processing country	Origin / Fur farm
32	02-UK H4821 FT – 3	Arctic fox	Collar LDS Fur Collar 5045318445964 BURBERRY	BURBERRY	Great Britain	Turkey	Turkey
33	03-UK H4821 FT – 4	Raccoon dog (same item number as in sample 26)	Collar LDS Fur Collar 5045318448422 BURBERRY	BURBERRY	Great Britain	Turkey	Finland
34	04-UK H4821 FT – 5	According to the label: Raccoon. This is obviously a false statement. According to species testing the fur comes from a raccoon dog	Collar 521056 MADELEINE	MADELEINE Fashion Online	Great Britain	Unknown	Presumed Finland
35	05-UK H4821 FT – 6	Raccoon dog	Jacket with fur hood lining WOOLRICH	BROWNS	Great Britain	Indonesia	China

Table 4

8.4 Description of the Investigated Samples

Sample 1 Fox Sample number: 01-AT H4674 FT – 8

Date of purchase	25.02.2011
Sample size	60 x 10 cm
Sample weight	58 grams
Dyed fur	Not defined
Article description incl. fashion label	Microfiber jacket BASLER
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	KLEIDER BAUER Mariahilfer Str. 111 1060 Vienna
Place of purchase	Vienna, Austria

Sample 2 Raccoon dog (Murmasky) Sample number: 02-AT H4674 FT – 9 / Children's clothes

Date of purchase	28.02.2011
Sample size	50 x 15 cm
Sample weight	58 grams
Dyed fur	Likely no
Article description incl. fashion label	Ski-Overall 9-12 Months MONCLER
Processing country	China
Processing company	Unknown
Breeding country	Unknown
Retailer	DOHNAL im STEFFL KIDS FLOOR Kärtner Str. 19 1010 Vienna
Place of purchase	Vienna, Austria

Sample 3 According to manufacturer/salesperson: Raccoon. According to DNA testing actually raccoon dog Sample number: 03-AT H4674 FT – 10 / Children's clothes

Date of purchase	28.02.2011
Sample size	45 x 10 cm
Sample weight	42 grams
Dyed fur	No
Article description incl. fashion label	Winter jacket Size 104 FRIEDA & FREDDIES
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	DOHNAL im STEFFL KIDS FLOOR Kärtner Str. 19 1010 Vienna
Place of purchase	Vienna, Austria

Sample 4 Raccoon dog Sample number: 04-AT H4674 FT – 11

Date of purchase	03.03.2011
Sample size	85 x 20 cm
Sample weight	153 grams
Dyed fur	No
Article description incl. fashion label	Blisland QF, XL Khaki BURBERRY
Processing country	Turkey
Processing company	Unknown
Breeding country Retailer	Finland BURBERRY Designer Outlet Parndorf Straße 2 7111 Parndorf
Place of purchase	Pandorf, Austria

Sample 5 Raccoon dog Sample number: 05-AT H4674 FT – 12

Date of purchase	03.03.2011
Sample size	70 x 15 cm
Sample weight	74 grams
Dyed fur	Likely yes
Article description incl. fashion label	Cindy with fur, vest SPORTALM KITZBÜHEL
Processing country	Austria
Processing company	Unknown
Breeding country	Unknown
Retailer	SPORTALM Exclusiv Designeroutlet 1, Unit 120 7111 Parndorf
Place of purchase	Pandorf, Austria

Sample 6 According to manufacturer/salesperson: No information available regarding the species; according to DNA testing actually raccoon dog. Sample number: 06-AT H4674 FT – 13

Date of purchase	05.03.2011
Sample size	50 x 15 cm
Sample weight	41 grams
Dyed fur	Likely no
Article description incl. fashion label	G. Giacci Danza 12 years/152cm DIADORA
Processing country	China
Processing company	Unknown
Breeding country	Unknown
Retailer	DREAM FASHION Outlet GmbH Kasernenstrasse 1, Unit 1-535, 5071 Wals-Siezenheim
Place of purchase	Wals-Siezenheim, Austria

Sample 7 According to manufacturer/salesperson: Rabbit and Raccoon. According to DNA testing actually raccoon dog and not raccoon. Sample number: 07-AT H4674 FT – 14

Date of purchase	05.03.2011
Sample size	50 x 70 cm
Sample weight	326 grams
Dyed fur	Not defined
Article description incl. fashion label	Concept vest SLUIS LEDER
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	SLUIS LEDER Factory GmbH Kasernenstrasse 1, 5071 Wals-Siezenheim
Place of purchase	Wals-Siezenheim, Austria

Sample 8 Fox (to pony jacket) Sample number: 01-BG H4821 FT – 7

Date of purchase	15.04.2011
Sample size	75 x 14 cm
Sample weight	100-200 grams
Dyed fur	Likely no
Article description incl. fashion label	Fur jacket with fur collar MODESTIA
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	VERSIS Slaveikov Square 1 Sofia
Place of purchase	Sofia, Bulgaria

Sample 9 Mink Sample number: 02-BG H4821 FT – 8

Date of purchase	15.04.2011
Sample size	25 x 20 cm
Sample weight	136 grams
Dyed fur	Likely no
Article description incl. fashion label	Fur cap
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	ALFA FURS Uzundzhovski str. 13 Sofia
Place of purchase	Sofia, Bulgaria

Sample 10 Seal Sample number: 03-BG H4821 FT – 9

Date of purchase	15.04.2011
Sample size	24 x 21 cm
Sample weight	96 grams
Dyed fur	No
Article description incl. fashion label	Fur cap
Processing country	Presumed Greece
Processing company	Unknown
Breeding country	Unknown
Retailer	BILIS Solunska Str. 14 Sofia

Place of purchase	Sofia, Bulgaria

Sample 11 Fox Sample number: 04-BG H4821 FT – 10

Date of purchase	15.04.2011
Sample size	30 x 24 cm
Sample weight	124 grams
Dyed fur	No
Article description incl. fashion label	Fur cap
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	ALFA FURS Uzundzhovski str. 13 Sofia
Place of purchase	Sofia, Bulgaria

Sample 12 Raccoon dog Sample number: 01-CH H4674 FT – 15

Date of purchase	17.02.2011
Sample size	25 x 20 cm
Sample weight	161 grams
Dyed fur	Yes
Article description incl. fashion label	Fur cap MAX MARA
Processing country	Italy
Processing company	Unknown
Breeding country	China
Retailer	MAX MARA Falkenstr. 11 8000 Zurich

Place of purchase	Zurich, Switzerland

Sample 13 Fox Sample number: 02-CH H4674 FT – 16

Date of purchase	17.02.2011
Sample size	40 x 5 cm
Sample weight Dyed fur	40 grams Likely no
Article description incl. fashion label	Down coat MODISSA
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	MODISSA Bahnhofstr. 74 Zurich
Place of purchase	Zurich , Switzerland

Sample 14 Fox Sample number: 03-CH H4674 FT – 17

Date of purchase	17.02.2011
Sample size	15 x 60 cm
Sample weight	74 grams
Dyed fur	Yes
Article description incl. fashion label	Fox boa GIORGIO PASSIGATTI (At DUBLANC)
Processing country	Unknown
Processing company	Unknown

Breeding country	Unknown
Retailer	DUBLANC Strehlgasse 16 8001 Zurich
Place of purchase	Zurich , Switzerland

Sample 15 Mink Sample number: 04-CH H4674 FT – 18

Date of purchase	17.02.2011
Sample size	3 x 25 cm
Sample weight	11 grams
Dyed fur	No
Article description incl. fashion label	Mink tail DUBLANC
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	DUBLANC Strehlgasse 16 8001 Zurich
Place of purchase	Zurich, Switzerland

Sample 16 Mink Sample number: 05-CH H4674 FT – 19

Date of purchase	21.02.2011
Sample size	Unknown, Adult hat
Sample weight	129 grams
Dyed fur	Likely no
Article description incl. fashion label	Mink hat KOHLER
Processing country	Switzerland
Processing company	Unknown
Breeding country	Scandinavia
Retailer	KOHLER

	Freie Str. 84 4001 Basel
Place of purchase	Basel, Switzerland

Sample 17 Raccoon dog Sample number: 06-CH H4674 FT – 20 / Children's clothes

Date of purchase	21.02.2011
Sample size	5 x 40 cm
Sample weight	100 grams
Dyed fur	Likely no
Article description incl. fashion label	Children's jacket WOOLRICH
Processing country	China/Italy
Processing company	Unknown
Breeding country	China
Retailer	SOPHYS BALE Freie Str. 88 4051 Basel
Place of purchase	Basel, Switzerland

Sample 18 Fox Sample number: 07-CH H4674 FT – 21/ Children's clothes

Date of purchase	10.03.2011
Sample size	5 x 40 cm
Sample weight	101 grams
Dyed fur	Not defined
Article description incl. fashion label	Children's jacket POIVRE BLANC
Processing country	Bangladesh/France
Processing company	Unknown
Breeding country	Unknown
Retailer	OCH SPORT Bahnhofstr. 56 8021 Zurich
Place of purchase	Zurich, Switzerland

Sample 19 Fox Sample number: 01-DE H 4674 FT-1

Date of purchase	18.02.2011
Sample size	50 x 12 cm
Sample weight	100 grams
Dyed fur	Not defined
Article description incl. fashion label	Collar LDS Fur collar BURBERRY
Processing country	Turkey
Processing company	Unknown
Breeding country	Finland
Retailer	BURBERRY Große Bleichen 21 (Galeria) 20354 Hamburg
Place of purchase	Hamburg, Germany

Sample 20 Raccoon dog Sample number: 02-DE H 4674 FT-2

Date of purchase	19.02.2011
Sample size	50 x 8 cm
Sample weight	60 grams
Dyed fur	No
Article description incl. fashion label	Scarf / Collar YVES SALOMON (BREUNINGER)
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	BREUNINGER GmbH & Co Markststr. 1-3 70173 Stuttgart
Place of purchase	Stuttgart, Germany

Sample 21 Fox Sample number: 03-DE H 4674 FT-3

Date of purchase	19.02.2011
Sample size	90 x 10 cm
Sample weight	110 grams
Dyed fur	Not defined
Article description incl. fashion label	Fur collar PUMPKIN (bei WÖHRL)
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	WÖHRL Feringastr. 2 85774 Munich
Place of purchase	Munich, Germany

Sample 22 According to manufacturer/salesperson: Raccoon. According to DNA testing actually raccoon dog Sample number: 04-DE H 4674 FT-4

Date of purchase	04.03.2011
Sample size	Complete jacket edging / Not removable
Sample weight	Complete jacket edging / Not removable
Dyed fur	Likely yes
Article description incl. fashion label	Leather jacket OAKWOOD
Processing country	Unknown
Processing company	Unknown
Breeding country	Unknown
Retailer	BAZAR ROYALE Grimmaische Str. 2-3 04109 Leizig
Place of purchase	Leizig, Germany

Sample 23 Fox (front) and rabbit (behind) Sample number: 05-DE H 4674 FT-5

Date of purchase	11.03.2011
Sample size	Front of a vest
Sample weight	100 grams
Dyed fur	Not defined
Article description incl. fashion label	Gilet Vest Noir T3 KOOKAI
Processing country	China
Processing company	Unknown
Breeding country	Unknown
Retailer	KOOKAI Schlegelstr. 4 10115 Berlin
Place of purchase	Berlin, Germany

Sample 24 Fox Sample number: 06-DE H 4674 FT-6

Date of purchase	12.03.2011
Sample size	76 x 6 cm
Sample weight	60 grams
Dyed fur	Likely no
Article description incl. fashion label	Down coat with fur hood AIRFIELD
Processing country	Unknown
Processing company	Unknown
Breeding country Retailer	Unknown AIRFIELD Mittelstr. 15 50672, Cologne
Place of purchase	Cologne, Germany

Sample 25 No information on the product. According to information collected from the retailer via telephone by FOUR PAWS: Raccoon or coyote. According to DNA testing actually raccoon dog Sample number: 07-DE H 4674 FT- 7 / Children's clothes

Date of purchase	17.03.2011
Sample size	55 x 3 cm
Sample weight	48 grams
Dyed fur	No
Article description incl. fashion label	Jacket, 10, ink NAPIJRI
Processing country	China
Processing company	Unknown
Breeding country	Unknown
Retailer	NICKI'S online E. Bächstädt GmbH Raiffeisenstr. 3 83607 Holzkirchen
Place of purchase	Internet retailer, Germany

Sample 26 Raccoon dog (same product as sample 33) Sample number: 01-NL H4674 FT – 22

Date of purchase	10.03.2011
Sample size	55 x 20 cm
Sample weight	150 grams
Dyed fur	No
Article description incl. fashion label	Collar LDS Fur Collar 5045318448422 BURBERRY
Processing country	Turkey
Processing company	Unknown
Breeding country	Finland
Retailer	BURBERRY Netherlands P.C. Hofstraat 69 1071 BP Amsterdam
Place of purchase	Amsterdam, The Netherlands

Sample 27 Fox Sample number: 02-NL H4674 FT – 23

Date of purchase	16.03.2011
Sample size	16 x 90 cm
Sample weight	160 grams
Dyed fur	Likely no
Article description incl. fashion label	Scarf GUCCI
Processing country	Italy
Processing company	Unknown
Breeding country	Finland
Retailer	GUCCI Netherlands P.C. Hofstraat 56-58 1071 CA Amsterdam
Place of purchase	Amsterdam, The Netherlands

Sample 28 According to manufacturer/salesperson: Raccoon. According to DNA testing actually raccoon dog Sample number: 03-NL H4821 FT – 1 / Children's clothes

Date of purchase	30.03.2011
Sample size	53 x 8.5 cm
Sample weight	50 grams
Dyed fur	No
Article description incl. fashion label	Children's jacket Fur hood lining NICKELSON
Processing country	China
Processing company	Unknown
Breeding country	Unknown
Retailer	LEDER PALEIS Kalverstraat 120 1012 PK Amsterdam
Place of purchase	Amsterdam, The Netherlands

Sample 29 Fox Sample number: 01-RO H4821 FT – 11

Date of purchase	22.03.2011
Sample size	100 x 20 cm
Sample weight	226 grams
Dyed fur	Yes
Article description incl. fashion label	Fur collar "Esfara Dama" CHRONOS ART
Processing country	Rumania (According to oral information)
Processing company	Unknown
Breeding country	Rumania (According to oral information)
Retailer	POSH MARKET 68-70, Calea Victoriei Avenue Bucarest
Place of purchase	Bucharest, Rumania

Sample 30 Nutria Sample number: 02-RO H4821 FT – 12

Date of purchase	29.04.2011
Sample size Sample weight	46 x 42 cm 140 grams
Dyed fur	Likely no
Article description incl. fashion label	Fur vest Model 128/1555 CHRONOS ART
Processing country	Rumania (According to oral information)
Processing company	Unknown
Breeding country	Rumania (According to oral information)
Retailer	VERONESSE Calea Victoriei Nr. 83-85 Bucharest
Place of purchase	Bucharest, Rumania

Sample 31 Mink Sample number: 01-UK H4821 FT – 2

Date of purchase	19.03.2011
Sample size	31 x 19 cm
Sample weight	175 grams
Dyed fur	No
Article description incl. fashion label	Hat ANDRÉ / HARRODS
Processing country	Canada
Processing company	Unknown
Breeding country	Unknown (Presumed: Canada)
Retailer	HARRODS 87-135 Brompton Road Knightsbridge London SW1X 7XL
Place of purchase	London, Great Britain

Sample 32 Arctic fox Sample number: 02-UK H4821 FT – 3

Date of purchase	19.03.2011
Sample size	53 x 15 cm
Sample weight	125 grams
Dyed fur Article description incl. fashion label	Yes Collar LDS Fur Collar 5045318445964 BURBERRY
Processing country	Turkey
Processing company	Unknown
Breeding country	Turkey
Retailer	BURBERRY Unit 1013 Westfield London Shopping Centre Ariel Way London W127 GB
Place of purchase	London, Great Britain

Sample 33 Raccoon dog (same product as sample 26) Sample number: 03-UK H4821 FT – 4

Date of purchase	20.03.2011
Sample size	53 x 17 cm
Sample weight	155 grams
Dyed fur	No
Article description incl. fashion label	Collar LDS Fur Collar 5045318448422 BURBERRY
Processing country	Turkey
Processing company	Unknown
Breeding country	Finland
Retailer	BURBERRY, Unit 1013 Westfield London Shopping Centre Ariel Way London W127 GB
Place of purchase	London, Great Britain

Sample 34 According to manufacturer/salesperson: Raccoon. According to DNA testing actually raccoon dog Sample number: 04-UK H4821 FT – 5

Date of purchase	18.03.2011
Sample size	71 x 18 cm
Sample weight	136 grams
Dyed fur	No
Article description incl. fashion label	Collar 521056 MADELEINE
Processing country Processing company	Unknown Unknown
Breeding country	Unknown (Presumed: Finland)
Retailer	Online order: MADELEINE Fashion Limited Hamilton House 9 Hucknall Road

	Nottingham
Place of purchase	Internet retailer, Great Britain

Sample 35 Raccoon dog Sample number: 05-UK H4821 FT – 6

Date of purchase	31.03.2011
Sample size	50 x 15 cm
Sample weight	Unknown
Dyed fur Article description incl. fashion label	No Jacket with fur hood lining WOOLRICH
Processing country	Indonesia
Processing company	Unknown
Breeding country	China
Retailer	BROWNS 50 South Molton Street London W1K 5SB
Place of purchase	London, Great Britain

8.5 Inspection Procedure and Measurement Accuracy

The following methods were commissioned by the laboratory, which the Bremer Environmental Institute used for the analyses:

Inspection procedure for the investigation of nonylphenol and octylphenol
1. Extraction with acetonitrile in an ultrasonic bath
2. Quantitative determination with GC-MS
Measurement uncertainty: 20%

Inspection procedure for the investigation of nonylphenol ethoxylates and octylphenol ethoxylates
1. Extraction with acetonitrile in an ultrasonic bath
2. Dividing into alkylphenols with aluminiumtriiodide
3. Determination with GC-MS, quantification based on ethylan 77 and triton X 100 following the division.
Measurement uncertainty: 20%

Inspection procedure for the investigation of preservatives (oPP, CMK)
1. Extraction with methanol/acetone
2. Derivatisation with pentafluorobenzoyl chloride
3. Separation, identification and quantification with capillary gas chromatography using GC/ECD and/or GC/MS.
Measurement uncertainty: 20 %

Inspection procedure for the investigation of leather for aromatic amines
According to LFGB § 64, 82.02-3, identical to DIN EN ISO 17234-1:2010
Measurement uncertainty: 25 %

Inspection procedure for the investigation of leather for formaldehyde
The inspection is carried out according to EN ISO 17226-1:2008-8 using HPLC procedure.
Measurement uncertainty: 20 %

Inspection procedure for the investigation of material samples for polycyclic aromatic hydrocarbons (PAHs)
Soxhlet extraction with toluene. Narrowing of the extract. Purification with mini silica gel. Separation, identification and quantification by capillary gas chromatography and GC/MS.
Measurement uncertainty: 20 %

Inspection procedure for the investigation of AOX. According to DIN EN ISO 9562

1. Extraction with ultrapure water
2. Adsorption on activated carbon, combustion in an oxygen stream
3. Microcoulometric determination of the halogen content, calculated as chlorine.

Inspection procedure for the investigation of boron, heavy metals and mineral tanning agents, total chemical extraction

1. Microwave extraction
2. Quantitative determination with ICP-MS in accordance with DIN EN ISO 17294-2

Inspection procedure for the investigation of boron, heavy metals and mineral tanning agents, eluate

1. Elution using acidic sweat solution
2. Quantitative determination with ICP-MS in accordance with DIN EN ISO 17294-2

Inspection procedure for the investigation of chromium VI
According to DIN EN ISO 17075:2088-02;
Measurement uncertainty: 20%

8.6 Preliminary Investigation

As was done in the first report in 2010, the samples to be investigated in this report were also initially subjected to preliminary testing to check the presence of contaminants and residues. The mixed sample groups for the testing were formed from 35 individual samples.

The results of the preliminary investigation already demonstrated that the sample had to have been contaminated with a variety of the suspected chemicals in relevant concentrations. Since composite samples were analysed, it was naturally not possible to determine the load on the individual samples based on the preliminary results. Based on these results, the individual samples were selected for the main study. The choice generally fell to the samples that were included in a composite sample with noticeable findings.

Since the results of the preliminary investigation only served for this preselection and did not allow any conclusions to be made concerning individual products, the findings are not reproduced in the report in detail. However, they have been documented and archived.

A total of 35 substances were in the preliminary investigation as described in the Annex[ii] in Table 5,which lists the substances and substance groups that were investigated. The table also indicates how often the respective target substance was detected in the composite samples of the preliminary investigation.

Investigated substance/group in the preliminary investigation	Percent of the investigated samples in which the target substance was detected in the preliminary investigation
1. Dimethylfumerate DMF	0
2. Naphthalene & 15 further PAHs	33
3. Nonyl and octylphenol ethoxylates	100
4. Preservatives: Phenolic, Isothiazolinones	22
5. Aromatic amines from azo dyes	100 (investigation was only done on dyed products)
6. Aldehydes: Formaldehyde or formaldehyde releasers	100
7. Glutaric dialdehyde	0
8. Boron, soluble mineral tanning agents (Al, Cr, Ti, Zr) and heavy metals in the total extraction	11 (Boron) to 100 (Chromium)
9. Organotin compounds incl. TBT	11
10. Chlorinated paraffins	11
11. AOX	22
12. Emission test chamber for volatile emitted chemicals	-

Table 5

8.7 Main Investigation

Based on the findings of the preliminary testing, the following substances and substance groups were selected for the main investigation:

	Investigated substance/group in the preliminary investigation	Percent of the investigated samples in which the target substance was detected in the preliminary investigation
1.	Naphthalene & 15 further PAHs	33
2.	Nonyl and octylphenol ethoxylates	100
3.	Preservatives: Phenolic, Isothiazolinones	22
4.	Aromatic amines from azo dyes	100 (investigation was only done on dyed products)
5.	Aldehydes: Formaldehyde or formaldehyde releasers	100
6.	Boron, soluble mineral tanning agents (Al, Cr, Ti, Zr) and heavy metals in the total extraction or in the eluate. Some selected samples were also specifically analysed for Cr (VI).	11 (Boron) to 100 (Chromium)
7.	Organotin compounds incl. TBT	11
8.	Chlorinated paraffins	11
9.	AOX	22

Table 6

Due to the negative results for DMF and glutaraldehyde in the preliminary investigation, these substances were no longer considered in the main investigation.

A total of 35 individual samples were tested in the main investigation in more than 200 individual tests. An overview of the individual samples and each of the investigated compounds is given in Annex [iii]. The results are summarised below.

Table 7 summarises the main findings. The detailed results can be obtained from Annex [iv].

		Heavy metals in the total extraction				Soluble heavy metals in the eluate						APEOand AP			Preservatives					
Sample	Sample number	Pb	Hg	Cr	B	Pb	Hg	Cr	B	Aromatic amines	Total PAHs	NP	OPEO	NPEO	oPP	CMP FA	MBT	CP14-17	AOX	Misc.
01-DE	H 4674 FT-1	1	< 0.1	1100				< 1		Aniline 25, PDA-Isom 620	0.34	n.n.	n.n.	14		31				
02-DE	H 4674 FT-2	0.5	< 0.1	2				< 1			1.3, kanz. 0.21	n.n.	n.n.	170		240				
03-DE	H 4674 FT-3	0.5	1.5	1900			< 0.02	9			6.6, kanz. 2.88	5	93	480		150				
04-DE	H 4674 FT-4	1	< 0.1	12000				80		n.n.	3.1, kanz. 0.69	3	n.n.	430		19				
05-DE	H 4674 FT-5	< 0.5	< 0.1	5500				18		Aniline 54		7	39	120		50				
06-DE	H 4674 FT-6	4.5	1.5	35		0.1	< 0.02					3	n.n.	130		45				
07-DE	H 4674 FT-7	3	< 0.1	950		< 0.1		3				7	720	1100		200				
01-AT	H 4674 FT-8	0.5		2150			< 0.02	3		Aniline 27, PDA-Isom 560		8	n.n.	17		13				
02-AT	H 4674 FT-9	0.5		6			< 0.02					5	n.n.	360		160				
03-AT	H 4674 FT-10	1.5		2200		< 0.1	< 0.02	75				n.n.	n.n.	330		170				
04-AT	H 4674 FT-11	< 0.5		12			< 0.02					3	n.n.	350		28				
05-AT	H 4674 FT-12	< 0.5		6000				55				n.n.	75	190		250			40	
06-AT	H 4674 FT-13	0.5		5								8	5	2500		55			15	

		Heavy metals in the total extraction				Soluble heavy metals in the eluate						APEOand AP			Preservatives						
Sample	Sample number	Pb	Hg	Cr	B	Pb	Hg	Cr	B	Aromatic amines	Total PAHs	NP	OPEO	NPEO	oPP	CMP	FA	MBT	CP14-17	AOX	Misc.
																	0				
07-AT	H 4674 FT-14	72		18000		0.3		95				6	n.n.	430			300			2.5	
01-CH	H 4674 FT-15	1	0.1	5200				33		Aniline 6, Methoxyaniline 20	0.48	4	n.n.	280			55		n.n.		
02-CH	H 4674 FT-16	< 0.5	0.1	970				48			0.69, kanz. 0.05	5	n.n.	1200			210		n.n.		
03-CH	H 4674 FT-17	1.5	< 0.1	8300				47		Aniline 21	2.7, kanz. 0.34	16	260	1400			83		990		
04-CH	H 4674 FT-18											15	n.n.	810			63				
05-CH	H 4674 FT-19	6.5	3.9	6		0.8	< 0.02				3.0, kanz. 0.92	n.n.	n.n.	130			29	1,2			DDT 79
06-CH	H 4674 FT-20	1.5		260	< 5	0.1						n.n.	n.n.	180			26	n.n.			
07-CH	H 4674 FT-21	3.5		1700	< 5	< 0.1		16				6	n.n.	600			250	n.n.			
01-NL	H 4674 FT-22	< 0.5		5	< 5							6	5	140			47				
02-NL	H 4674 FT-23	3		4	70	< 0.1			60			6	n.n.	64			54				
03-NL	H 4821 FT-1		< 0.1	860				7				11	n.n.	610			220				
01-UK	H 4821 FT-2			5								9	82	270	52	1.6	51				
02-UK	H 4821 FT-3			7800				15		Aniline n.n., PDA-Isom		7	n.n.	57	1.2	0.7	3				

		Heavy metals in the total extraction				Soluble heavy metals in the eluate						APEOand AP			Preservatives						
Sample	Sample number	Pb	Hg	Cr	B	Pb	Hg	Cr	B	Aromatic amines	Total PAHs	NP	OPEO	NPEO	oPP	CMP	FA	MBT	CP14-17	AOX	Misc.
										870											
03-UK	H 4821 FT-4			150								11	19	75	14	4	45				
04-UK	H 4821 FT-5			2600				11				33	10	2100	n.n.	3.5	62				
05-UK	H 4821 FT-6		0.1	11								12	1.9	125	n.n.	9.3	160				
01-BG	H 4821 FT-7	0.5	0.1	5400				38			0.7, kanz. 0.09	6	9	140	1,5	6.6	130			20	
02-BG	H 4821 FT-8	2.5	2.1	215		< 0.1	< 0.02				6.2, Naph 5.7	9	1	176	3	5.3	37			60	
03-BG	H 4821 FT-9	2.5	0.1	3500				110			0.83	8	1.6	85	3,6	12	7			200	
04-BG	H 4821 FT-10	0.5	0.1	3							0.46	n.n.	250	190	150	1.6	99			9	
01-RO	H 4821 FT-11		0.3	4500				< 1		Aniline 8		14	1	174			17				
02-RO	H 4821 FT-12		< 0.1	9900				48		n.n.		9	0.7	166			21				
Amounts in mg/kg					n.n. = not detected						OZV = Organotin compounds				PAH = Polycyclic Aromatic Hydrocarbons						
NPEO = Nonylphenol ethoxylate					CP14-17 = Chlorinated paraffins with chain length C14 to C17						FA = Formaldehyde				kanz.= Total carcinogenic PAHs according to the EPA						
OPEO = Octylphenol ethoxylate					oPP = o-phenylphenol						MBT= Monobutyltin										
NP= Nonylphenol					CMP = 4-chloro-3-methylphenol						PDA-Isom= Isomers of phenylenediamine										

Table 7

9 Evaluation of the Hazardous Chemical Residue and Contamination in Fur Products

9.1 The evaluation system

Each of the samples tested is evaluated according to three different standards: Firstly, the sample is evaluated using the limits of the EU regulations and the national and international statutory regulations, then the different standards of the leather and textile industries are applied. Finally, an assessment is made based on benchmarks that EcoAid established themselves oriented towards preventative health. An overview and description of these regulations and standards can be found in chapter 6.

In the following chapters, first each pollutant is presented and then each of the investigated samples together with the major findings and evaluations. Moreover, in the Annexes to this report, all of the 35 samples examined are listed with detailed measurement results.

Due to the negative results for DMF and glutaraldehyde in the preliminary investigation, they were no longer considered in the main study. It is assumed that the samples studied here show no significant exposure to these chemicals.

Each sample is evaluated on the basis of nine different evaluation parameters. Thereby, each parameter stands for one of the nine investigated chemicals/groups. The different rating grades were awarded according to the following table - depending on the contamination load on the sample.

Evaluation grades:

Grade 1: Below the EcoAid benchmark or no findings

Grade 2: The EcoAid benchmark is reached or exceeded

Grade 3: Industrial standards (e.g. SG Leather) reached or exceeded

Grade 4: Statutory benchmarks/limits reached or exceeded

The grades are derived from the thresholds of the three references standards used. These can be found in the following table.

		No findings or below the EcoAid benchmark	EcoAid benchmark reached or exceeded	Industrial standards (e.g. SG Leather) reached or exceeded	Statutory benchmarks/limits reached or exceeded
	Contaminant	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**
1	Alkylphenols/-ethoxalates (Total of NP, NPEO, OPEO)	<50	>=50	>=100	>=1000
2	Heavy metals - lead, eluate	< 0.4	>=0.4	>=0.8	
2	Heavy metals – chromium total, eluate	<100	>=100	>=200	
2	Heavy metals - Mercury, eluate	< 0.02	>=0.02	>=0.02	
2	Boron, eluate	< 10	>=10		
3	Chlorinated paraffins	< 100	>=100	>=1000*	
4	Aromatic amines: phenylenediamine	<20	>=20	>=30	
5	Preservative: o-phenylphenol	< 50	>=50	>=100	
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1	
7	Formaldehyde	< 30	>= 30	>=75	>=500**
8	AOX	<5	>=5	>=5	
9	PAH – Total value	<5	>=5	>=10	
9	PAK - carcinogenic	<0.2	>=0.2***	>=1	

* Standard only for short-chain CPs

**: BfR proposal for mandatory labelling

***: This value also corresponds to the limit proposed by the BfR for carcinogenic PAHs

Table 8

The EcoAid total evaluation for each sample corresponds to the worst of up to nine individual grades received.

9.2 Evaluations listed by chemicals

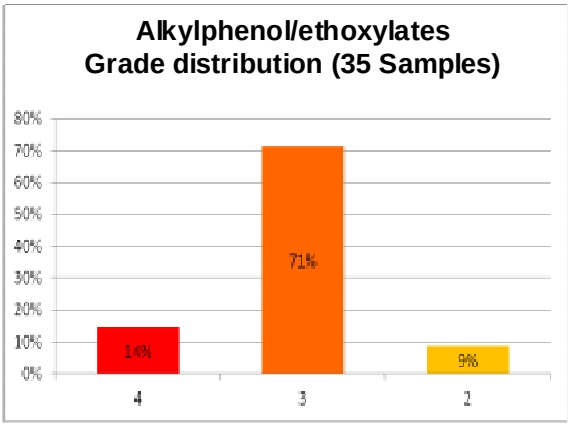
9.2.1 Alkylphenols and Alkylphenol ethoxylate

This group of chemicals was detected most frequently in the test. Ethoxylates (APEO) were found in all 35 samples, with the totals fluctuating in value between 15 and 2500 mg/kg. The compounds appear to be standard substances in fur production.

- Nonylphenol (NP) was found in 27 samples. The values vary between 3 – 33 mg/kg.
- Octylphenol ethoxylate (OPEO) was found in 18 samples with values between 1 – 720 mg/kg.
- Nonylphenol ethoxylate (NPEO) was detectable in all samples with a value between 14 – 2500 mg/kg.

In general, the contamination of the samples with AP and APEO are relevant in terms of consumer health protection:

- In 33 of the 35 fur samples, the EcoAid benchmark for this substance group was exceeded.
- 29 furs also did not meet the requirements of the industry's own SG Leather standards or the requirements of the organic seal "Blue Angel ". A waiver on the use of alkylphenol ethoxylates in the fur industry by the manufacturer, as was assured in 1986 and 1992 in the EU, is not recognisable.
- In five samples, the measured values are also higher than 1000 mg/kg and thereby above the permitted EU or Swiss limit for APEOs in chemicals and chemical mixtures. If the products were processed in Europe, there would be the strong suspicion of violations of the EU Chemicals Legislation. Therefore, EcoAid recommends filing a complaint with the responsible regulatory authorities.
-



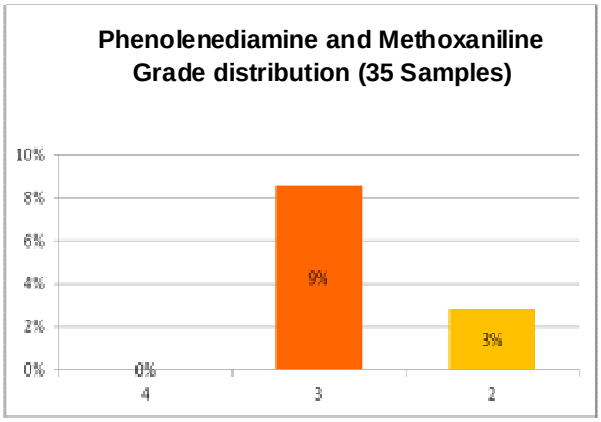
In the majority of the samples tested, the contamination with APEOs is above the EcoAid benchmark. The products affected should not come up for sale or be used by consumers. Industrial and governmental institutions should take urgent measures to find a substitute for these problem chemicals.

9.2.2 Aromatic amines

Aromatic amines were found in 7 samples. Aniline was found in 7 samples between 6 and 54 mg/kg, phenyl diaminisomer (PDA)was found in 3 samples between 20 and 870 mg/kg and 2–methoxyaniline (o-anisidine)was found in one sample with 20 mg/kg.

The evaluation of the Bremer Environmental Institute:
"In three of the 9 furs investigated, phenylenediamine was detected above 500 mg/kg, 2-methoxyaniline was detected in one fur with 20 mg/kg. Thus the value for the detection of a prohibited azo dye (30 mg/kg) is not reached by 2-methoxyaniline.
Due to the carcinogenic potential of aromatic amines – also allergenic for phenylenediamine – the use of these compounds should be avoided in the opinion of the Bremer Environmental Institute, even if this results in a reduction in the variety of colours that the product can have."

EcoAid considered phenylenediamine and methoxyaniline in the evaluation. In the majority of the tested samples, the individual exposures were above the EcoAid benchmark value for aromatic amines. The affected products should not come up for sale or be used by consumers. Industrial and governmental institutions should take urgent measures to find a substitute for these problem chemicals. The use of non-approved colorants cannot be excluded in some of the samples so the responsible supervisory authorities should be informed and an inspection should be requested.



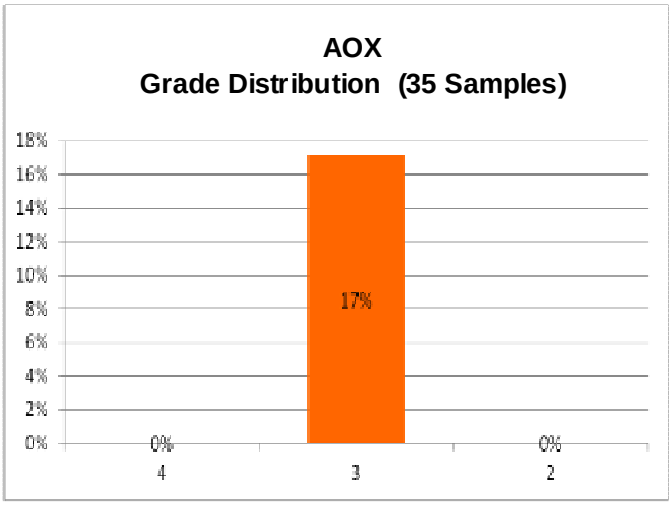
Note: A directly applicable legal limit for phenylenediamine could not be determined. For this reason alone, 0% of the evaluation is obtained from the grade category 4. As only a portion of the samples, i.e. clearly dyed fur products, were examined for aromatic amines, a higher rate of contamination is possible.

9.2.3 AOX (Absorbable Organic Halogens)

The AOX are a very heterogeneous group of substances of frequent toxicological concern, persistent and accumulate in organism with organic halogenated compounds. In the present study, there were 7 samples found with values between 2.5 – 200 mg/kg.

The evaluation of the Bremer Environmental Institute:
"The examined furs have AOX levels from between 2.5 and 200 mg/kg. Especially with the highly contaminated sample (200 mg/kg) a use of halogenated organic compounds, e.g. as a solvent or in the dyeing, is not unlikely. Due to the often poor degradability and propensity to bio-accumulate, the use of organic halogens should be avoided. In practice, it is possible to achieve lower levels of AOX contamination in leather products."

In the majority of individual samples tested for AOX, the contamination levels are above the EcoAid benchmark. The affected products should not come up for sale or be used by consumers. Industrial and governmental institutions should take urgent measures to find a substitute for these problem chemicals.



Note: 7 of the 35 samples were analyzed for AOX. AOX was detected in each of these 7 samples (6 of which were above the EcoAid benchmark), so the actual proportion of AOX positive samples is presumed to be much higher in the total sample. A directly applicable legal limit for AOX could not be determined. For this reason alone, 0% of the evaluation is obtained from the grade category 4.

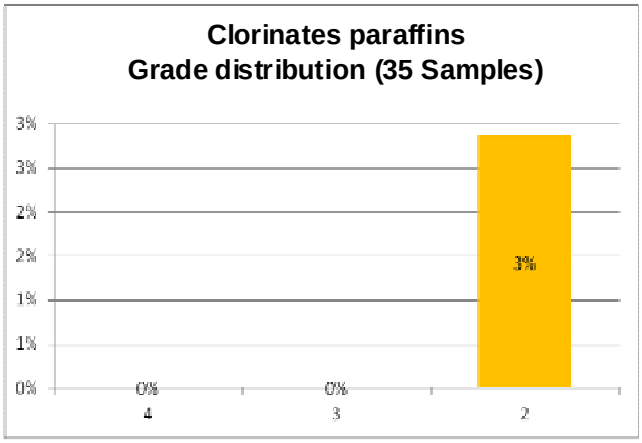
9.2.4 Chlorinated paraffins

Ina sample from Switzerland, a large amount, 990 mg/kg, of medium-chain chlorinated paraffins were found.

Evaluation by the Bremer Environmental Institute:
"In the analysis of the fur samples for chlorinated paraffins, medium-chain chlorinated paraffins were detected in sample H 4674 FT-17 in an amount of 990 mg/kg which is below the usage prohibition of the REACH Regulation for short-chain chlorinated paraffins. Chlorinated paraffins with medium-chain lengths are seen as less toxic than the short-chain representatives and no carcinogenic potential is known. Due to its aquatic toxicity, however, the use of these compounds should be avoided to prevent the possibility of their entry into the environment, as much as they can be dispensed with from a technical point of view. "

The EcoAid benchmark was exceeded. The benchmark of the leather industry standard SG-Leather refers only to short-chain chlorinated paraffins; the levels detected were only just under this benchmark. Although the chlorinated paraffin contamination was only comparatively rarely found in this test, industry and legislators should take measures to prevent their use in the apparel industry entirely.

Whether the chemical was used as a fattening agent, as a flame retardant, plasticiser, for waterproofing or for other reasons is open. In any case, the use of this chemical in the clothing sector is a completely unnecessary risk and causes unnecessary health and environmental contamination.



Note: A directly applicable legal limit for chlorinated paraffins could not be determined. For this reason alone, 0% of the evaluation is obtained from the grade category 4.

9.2.5 1.1-(4.4`- dichlorophenyl)-2-2-2-trichloro- ethane (DDT)

DDT was found in a sample from Switzerland with 79 mg/kg.
DDT is a classic environmental chemical. It was used worldwide last century as a pesticide. Since its use in Europe and in nearly every other country in the world is forbidden, the question arises: how could it reach such a relatively high concentration in the fur product?

The evaluation of the Bremer Environmental Institute:
"In one of the furs studied (H 4674 FT-19) 79 mg/kg DDT and its isomers were detected. This concentration indicates a treatment of the fur with the appropriate chemical. Trade and use of this product is not approved in Europe."

The suspected use of DDT in the affected sample is illegal. Moreover the product should also not have been sold. It is presumed that there has been not only a violation of the national laws of Switzerland but also a violation of the Stockholm Convention of the United Nations.

Further evaluations and recommendations can be found in the sample evaluation in Chapter 9.6.5.

9.2.6 Formaldehyde

Formaldehyde was detected in all of the samples in this test program. The measured formaldehyde concentrations ranged from 7 to 550 mg/kg with an average of almost 100 mg/kg. This suggests formaldehyde and formaldehyde releasing substances are still widely used in the fur industry. An improvement of the current situation with respect to Report I, which we wrote in 2010, is not visible.

Following the 2007 assessment made by the German Federal Agency for Risk Assessment (BfR), formaldehyde has been classified as a contact allergen, which can trigger allergic reactions even in low concentrations. Since 2004, the World Health Organisation has classified formaldehyde as "carcinogenic to humans". The chemical, which is easily emitted from the product as a gas and can enter the body through inhalation or through the skin, is one of the most relevant contaminants in fur products with regard to protecting the health of consumers and employees.

The industrial standards SG Leather allows 75 mg/kg (adults) or 20 mg/kg (children) of the substance. The first value was exceeded by 43% of the samples and is evidence that the fur industry doesn't pay much attention to its own voluntary standards.

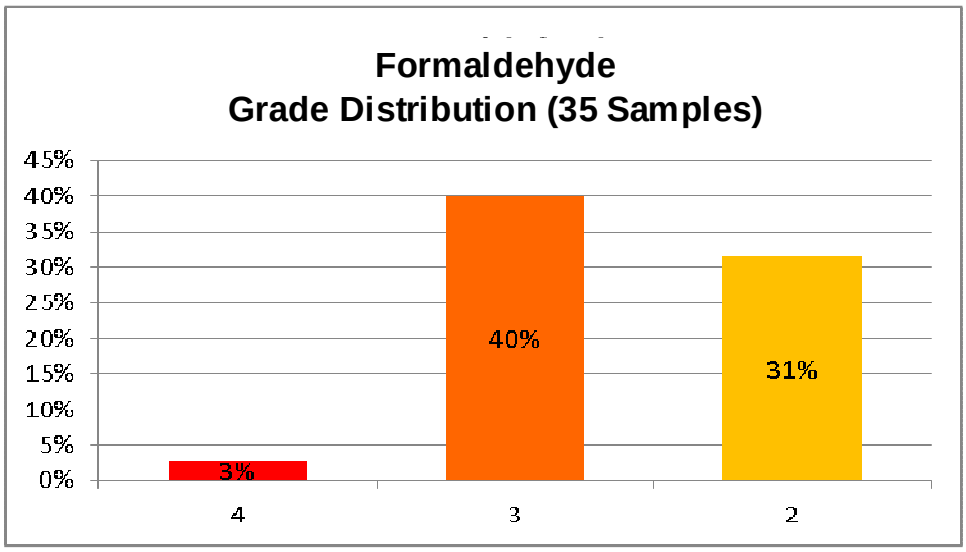
Some of the articles that were strongly contaminated with formaldehyde were children's clothing. These are the samples 07-CH and 03-NL. The Oeko- Tex Standard 100 has set a benchmark value for infants of 16 g/kg for its member companies. 32 of the 35 samples exceeded this.

One sample, with more than 500 mg/kg, exceeded the value at which the German Federal Institute for Risk Assessment BfR recommends that it be labelled on the product.
One of the samples from Bulgaria exceeded the Bulgarian national limit for formaldehyde.
22 samples (63 %) exceeded the limit of 30 mg/kg set by the EU Toy Directive.

From the evaluation by the Bremer Environmental Institute:
"As a further comparison: In 2011, the EU rapid alert system for all hazardous consumer products, RAPEX, pointed out noticeable formaldehyde contamination in children's underwear with 44,9 mg/kg, in 2010 the formaldehyde content in the leather innersole of a ladies' shoe was 344 mg/kg, in a t-shirt print with 52 mg/kg and in changing mats for babies with 86 to 91 mg/kg. These concentrations all exceed the national limits of Poland, Bulgaria and Finland (30 mg/kg). From the 35 individually tested fur samples, 32 samples exceeded the reference values for infants and toddlers, 15 samples exceeded the maximum values for products with body contact and 13 furs the maximum value for products without body contact for all listed (textile) labels. The highest level of contamination was 550 mg/kg

detected in the fur of a raccoon dog (Sample H 4674 FT-13). As early as 1998, the Textile Work Group of the former BgVV (today BfR) suggested lowering the content for the labelling obligation on work apparel to 500 mg/kg. Were the legislators to follow the suggestion of the Textile Work Group of the BfR, then this fur would need to be marked accordingly with a formaldehyde notice. Overall, the detected formaldehyde concentrations in the investigated furs did not require labelling; however in most cases they should be classified as being noticeably high. Particularly in view of the carcinogenic and allergenic potential of this compound, unrestricted use with skin contact are not recommended by the Bremer Environmental Institute, also for reasons of preventative health protection."

The EcoAid benchmark value was exceeded in 26 (74%) of the samples. When children's clothing is contaminated with formaldehyde, there should be a product recall.
All 12 samples of 100 mg/kg should be reported at the office for consumer protection in the various countries, as well as to the EU Commissioner for Health and Consumer Protection, the responsible authority for the rapid warning system RAPEX.
Comprehensive remedial action urgently needs to be taken by industry, legislators and the regulatory authorities to avoid these frequent and high levels of contamination.

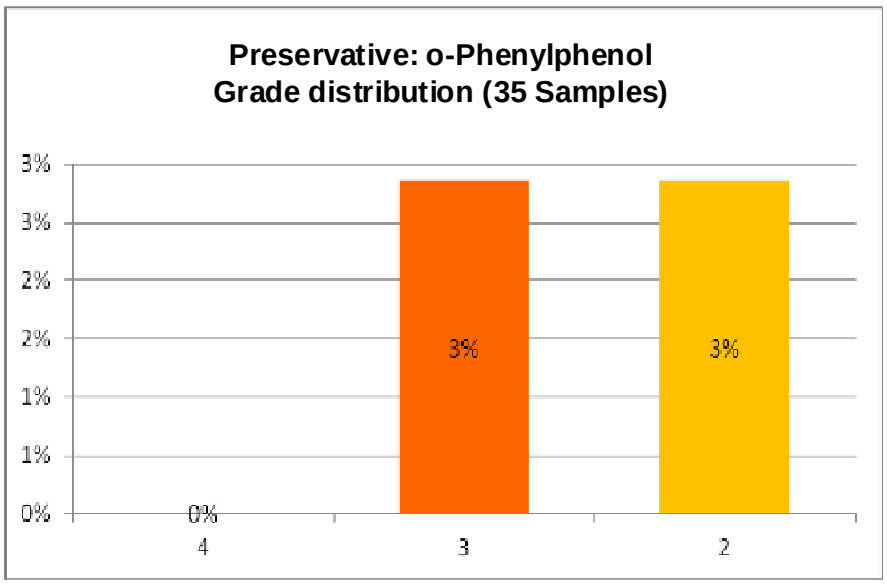


9.2.7 Preservatives

In some samples the preservatives o- phenylphenol (o- PP) and 4- chloro- 3 methoxyphenol (CMP) were found. In seven samples o-PP was found between 1.2 – 150 mg/kg, in nine samples CMP between 0.7 – 9.3 mg/kg.

From the evaluation of the Bremer Environmental Institute:
"The IVN, in its leather benchmarks, sets a limit of 100 mg/kg on the amount of approved preservative (o-phenylphenol, CMP, n-octylisothiazolinone, methylisothiazolinone and busan), the environmental label "Blue Angel" for shoes sets an upper limit for o-phenylphenol of 1000 mg/kg and for CMP of 600 mg/kg. In the 9 investigated furs o-phenylphenol (between 1.2 and 150 mg/kg) was detected in 7 products and CMP was detected in all furs in low concentrations. With the exception of the H 4821 FT-10, in which the limit of the IVN was exceeded, the contamination levels with the investigated preservatives should be regarded as being low."

In two of the investigated samples, the EcoAid benchmarks for o-PP were exceeded. One of the samples was also well above the limit of the SG Leather Industrial Standards.



Note: oPP was suspected in 9 of the samples examined and detected in seven of them. Therefore, it is possible that there is a higher rate of contamination when all 35 samples are considered. A directly applicable legal limit for the preservatives could not be determined. For this reason alone, 0% of the evaluation is obtained from the grade category 4.

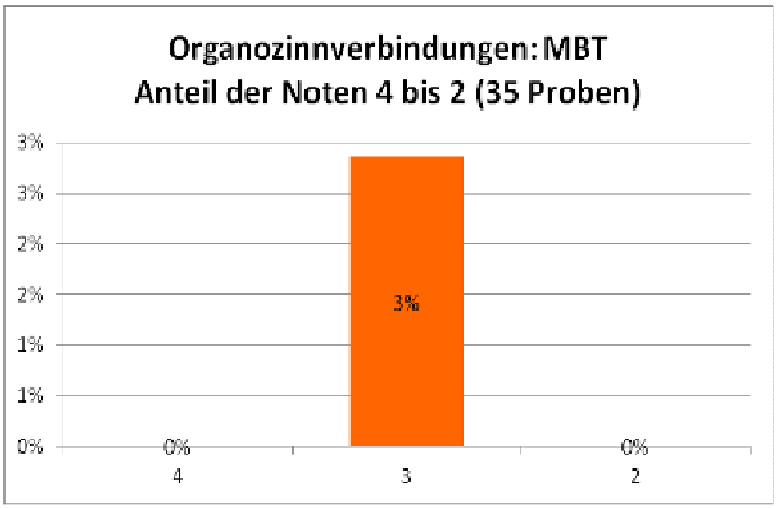
9.2.8 Organotin compounds

In a sample from Switzerland, the compound monobutyltin (MBT) was found with 1.2 mg/kg.

The evaluation of the Bremer Environmental Institute:
"The IVN does not allow the use of organotin compounds in leather. The basic criteria for the "Blue Angel" for shoes set a limit for mono- and dibutyltin compounds as well as for dioctyl and triphenyltin compounds of 1 mg/kg. Tributyltin compounds may not exceed 0.025 mg/kg. As a further comparison: In the opinion of the BfR for children's playgrounds a risk-related benchmark of 25 mg organotin compounds per kg of sand was derived. A North

German Work Group, with the participation of the Federal Environmental Agency, proposed an environmentally hygienic preventative value of 0.5 mg/kg for the North German coastal sand. In one of three investigated samples, 1.2 mg/kg monobutyltin compounds were detected. In spite of classifying the toxicological relevance of this substance as lower in comparison to other organotin compounds, the use of organotin compounds should be dispensed with in leather manufacturing for reasons of preventative health protection."

In the sample mentioned above, EcoAid and industrial benchmarks were exceeded.



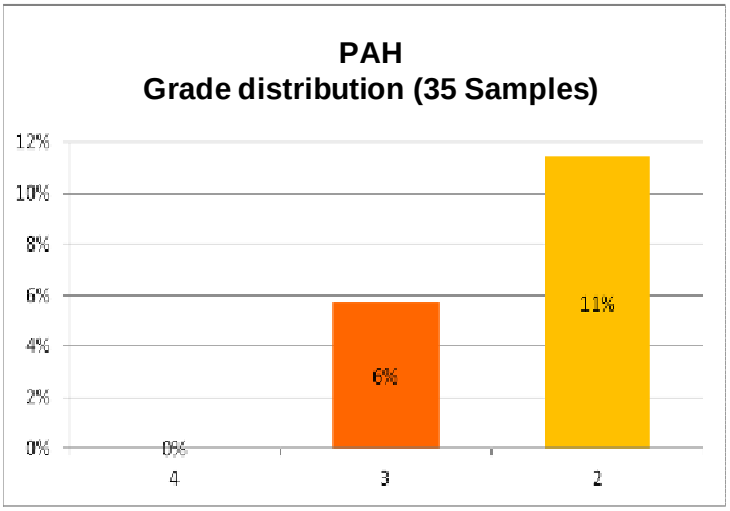
Note: Since organotin compounds were only investigated in three individual suspected samples, it is possible that there is a higher rate of contamination when all 35 samples are considered. A directly applicable legal limit for MBT could not be determined. For this reason alone, 0% of the evaluation is obtained from the grade category 4.

9.2.9 Polycyclic Aromatic Hydrocarbons (PAHs)

In the present study, PAHs were detected in 12 samples, in 7 of these samples representatives of the carcinogenic PAHs were found. The findings focus on phenanthrene, flouranthene, pyrene, and naphthalene in one sample. The last two PAHs are carcinogenic substances.

Evaluation of the Bremer Environmental Institute:
"In July 2010, the Federal Institute for Risk Assessment (BfR) published an opinion proposing an EU-wide restriction on the use and sale of PAH contaminated products. Thereby, the content of carcinogenic PAHs should not exceed 0.2 mg/kg each. This opinion is based on the analysis of more than 5000 consumer products, from electrical devices to toys and materials with close skin contact. Of the 12 individual samples examined, 2 samples exceeded the total limit of the IVN for leather. Carcinogenic PAHs were detected well above 0.2 mg/kg in five of the samples. Thus, the BfR recommended value for carcinogenic PAHs in consumer goods was exceeded in these furs. Furthermore, in one

sample, a conspicuous naphthalene content of 5.7 mg/kg was detected. All samples exceeded the cumulative limit for obtaining the GS seal for children's toys below three years of age. However it must be observed here that the usage patterns for toys and furs vary widely. As PAHs are easily absorbed by the skin (naphthalene also through inhalation due to its volatility), exposure of the user through contaminated furs cannot be safely ruled out."



In 6 (17%) of the samples, the EcoAid benchmark for PAHs (cumulative value or value for carcinogenic PAHs) was exceeded. In one sample, the contamination also exceeded the industrial standards of SG Leather. Thus, PAHs play a relevant role as pollutants in fur products and remedial measures by industry, legislators and regulatory authorities are required.

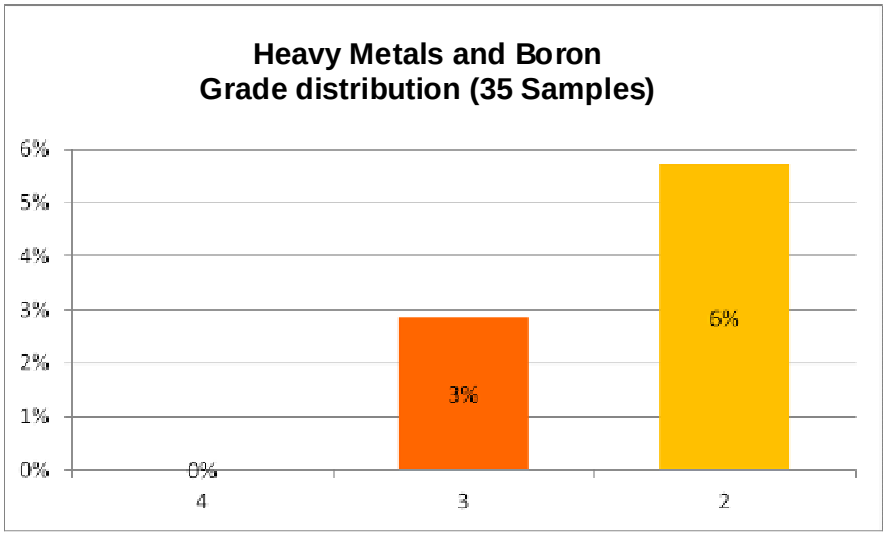
Note: A directly applicable legal limit for PAHs could not be determined. For this reason alone, 0% of the evaluation is obtained from the grade category 4.

9.2.10 Heavy metals and Boron

Heavy metal contamination was detected in 9% of the sample in this test program in concentrations over the EcoAid benchmarks. Therefore, it cannot be claimed that a solution has been found for the problem of heavy metal contamination in fur products. Three heavy metals were found in high concentrations: Lead (Pb), Chromium (Cr) and Mercury (Hg). The especially toxic chromium (VI) could not be detected in the suspected samples.

For the evaluation of heavy metal and boron levels, only the results for the soluble heavy metals (eluate value) washed
out of the product were applied and not the significantly higher heavy metal totals (total extraction).

The EcoAid benchmarks for heavy metals and boron were exceeded in three samples. Additionally, in two of these samples, the benchmark of the industrial standard SG Leather was also not complied with.



Note: A directly applicable legal limit for heavy metals and boron could not be determined. For this reason alone, 0% of the evaluation is obtained from the grade category 4.

9.2.10.1 Boron

Boric acid and borates were only included in the list of substances of concern of the EU-REACH/SVHC in 2010. In the present study, it was found in only one sample. Boron is sometimes used together with chromium in the tanning process.

Evaluation of the Bremer Environmental Institute:
"Boric acid and borates generally have good water solubility and can therefore be dissolved and absorbed from textiles and leather through skin contact. In the tests carried out, an elevated level of boron was only detected in one sample (H 4674 FT-23) with 70 mg/kg in the total extraction. The eluate content was almost as high with 60 mg/kg. The determination of elevated boron content can be a reference to the use of boric acid as a preservative. However, boron is also used in another form in the manufacturing of leather. A boron content of 70 mg /kg would represent an amount of 400 mg of boric acid per kilogramme of fur, if boric acid had been used. In this concentration range, a corresponding preservative effect is to be suspected for boric acid. Due to the reproductive toxicity of boric acid, this amount would be classified as being too high. However, based on the present study, it cannot be safely assumed that it was a boric acid application that was used."

9.2.10.2 Lead (Pb)

In 26 of the 35 individual samples, lead was detected in the total extraction process, in amounts from 0.5 – 6.5 mg/kg. Soluble lead was detected in the eluate of 9 samples from 0.1 – 0.8 mg/kg. In the sample containing 0.8 mg/kg of soluble lead, the EcoAid benchmark

as well as the SG – Leather industrial standard benchmark was exceeded. The standards of GOTS, IVN and the German RAL Textile (Blue Angel) were not met.

The evaluation of the Bremer Environmental Institute:
"In accordance with Regulation (EC) No. 1907/2006 (REACH-Regulation), lead carbonates and lead sulphates may not be brought into circulation through use in colorants. Individual regulations like the European Toy Safety Directive (2009/48/EC) and the Packaging Directive (94/62/EC) set limits in the total extraction for various products of 160 or 100 mg/kg. The Austrian Federal Environmental Agency published a study in 1999 (Reports, R-159, Vienna, 1999, Elisabeth Fassold, Gernot Häussler, Philipp Hohenblum, Sigrid Scharf), in which the average detected lead content in leather eluate was less than 0.4 mg/kg. In one case, an eluated content of up to 5.2 mg/kg was detected. The Chemical and Veterinary Investigation Office of Freiburg investigated Santa Claus costumes for their heavy metal content in 2010. The lead levels detected in the total extraction were from 2,600 to 7,000 mg/kg. Lead residues are not regulated in all areas. The OekoTex Standard 100 defines a limit of 90 mg/kg in the total extraction as a prerequisite for the awarding of the OekoTex Seal. The criteria for obtaining the environmental seal "Blue Angel" (RAL-UZ 155) which are put on leather shoes set a maximum value in the eluate of 0.8 mg/kg and 50 mg/kg in the total extraction. Lead is stored in the human body to a great extent and can lead to health problems. The International Agency for Research on Cancer (IARC) classifies anorganic lead compounds as possibly being carcinogenic for humans. In the fur samples presented, lead content from <0.5 to 6.5 mg/kg was detected in the total extraction, which in most cases occurred as the result of a contamination (through e.g. process water containing lead). Only one sample (H 4674 FT-14) contained 72 mg/kg. The eluated content was well below the content in the total extraction. Here a maximum eluated content of 0.8 mg/kg (H 4674 FT-19) was detected. Based on the limit of 90 mg/kg in the total extraction for the OekoTex-100-Standard as well as 0.8 mg/kg in the eluate for the "Blue Angel", there are only two furs from the presented samples which are within the stated limits (H 4674 FT-14 and H 4674 FT-19)."

9.2.10.3 Chromium (CrIII, CrVI)

In this study, chromium was found in 34 of 35 fur samples in the total extraction process. The contamination was from 2 – 18000 mg/kg. In the eluate test, chromium was found in concentrations from 7 to 110 mg/kg in 15 samples. The especially toxic Cr (VI) could not be detected in the suspected samples.
In one sample from Bulgaria, the EcoAid benchmark for soluble chromium was exceeded in the eluate test.

Evaluation of the Bremer Environmental Institute:
"By default, the performed element analysis of total chromium or elemental analysis after elution with acidic sweat solution cannot say anything about the oxidation state of

chromium and thus the toxicity. A study by the Austrian Federal Environmental Agency (Reports, R-159, Vienna, 1999, Elisabeth Fassold, Gernot Häussler, Philipp Hohenblum, Sigrid Scharf) determined for leather, an average chromium content in the eluate of approx. 30-50 mg/kg. The results ranged from less than 6 up to 160 mg/kg. The environmental symbol "Blue Angel"for Shoes sets an upper limit for chromium in the eluate of 200 mg/kg. 20 of the 34 inspected furs show a chromium contamination in the total extraction of more than 500 mg/kg. This indicates mineral tanning with chromium (partial tanning/main tanning). In the eluate, the chromium content detected was less than 1 mg/kg up to a maximum 110 mg/kg. The results are comparable with the study conducted by the Austrian Federal Office and the upper limit for chromium to obtain the environmental seal "Blue Angel" was not exceeded. The analytical methods used leave no conclusion about the oxidation state of chromium in the fur and thus the relevance to human health. When there are higher chromium levels in the eluate, a separate study for chromium (VI) can be carried out to estimate the health hazard."

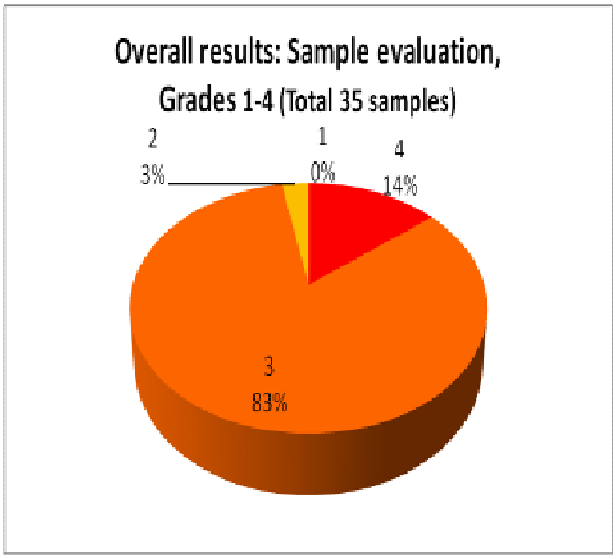
9.2.10.4 Mercury (Hg)

In the present study, mercury was detected in 19 out of 35 samples through total extraction. In the eluate, there were no significant amounts of soluble mercury found, so none of the samples exceeded the EcoAid benchmark.

Evaluation of the Bremer Environmental Institute:
"In consumer goods (like e.g. clothing and shoes), mercury is not explicitly forbidden according to the Food and Feed Legislation (LFGB). Regulation (EC) No. 1907/2006 (REACH Regulation) forbids the use of mercury compounds e.g. for the impregnation of heavy industrial textiles and their yarns. The European Toy Safety Directive (2009/48/EC) allows a migration limit for mercury of 7.5 mg/kg in dry materials. Following the leather benchmark limits of the IVN, mercury contamination in leather may not exceed the limit of 0.2 mg/kg. In the 8 fur samples, for which the eluate was inspected, no mercury was detected above the limit of 0.02 mg/kg. In the total extraction, content of less than 0.1 mg/kg up to a maximum of 3.9 mg/kg was detected. These concentration levels are caused by contamination; they cannot be assumed to have resulted from a particular treatment, e.g. through preservation with mercury compounds. In general, in the opinion of the Bremer Environmental Institute, the contamination of heavy metals in commodities should be kept as low as possible for the protection of health and the environment. Many leather and fur products easily fall under mercury concentrations in the total extraction of 0.2 mg/kg."

9.3 An Overview of the Overall Results of the Samples

The total of 35 samples was evaluated with the following grades:

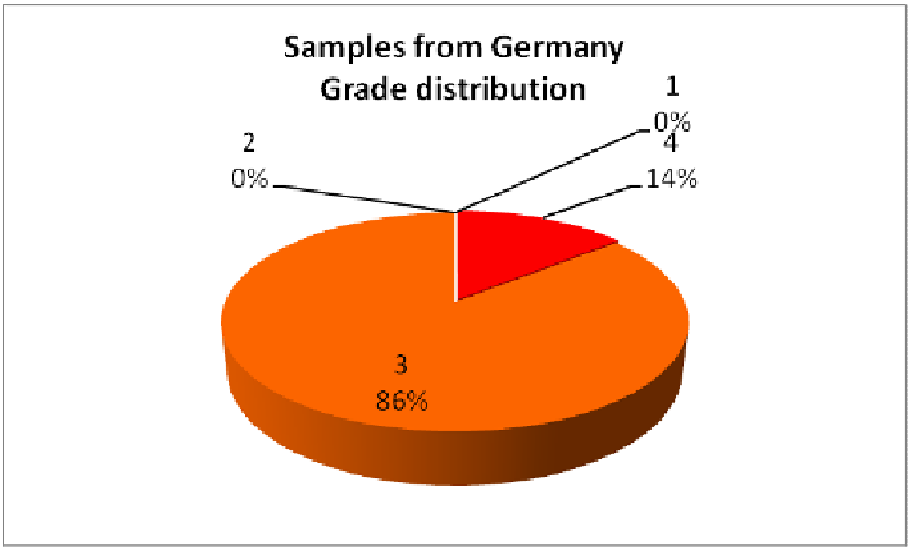


- Grade 1 (green): 0 %, no samples.
  - Without claim
  - No EcoAid benchmark was reached or exceeded
- Grade 2 (yellow): 3%, 1 sample: Contaminated, Not Recommended
  - The product is clearly contaminated with pollutants and not recommended.
  - At least one EcoAid benchmark was reached or exceeded.
  - A health risk to workers during manufacture and sales as well as to sensitive groups among consumers is not excluded.
  - An environmental hazard in the production is possible.
- Grade 3 (orange-red): 83%, 29 samples: Heavily contaminated, health risk
  - The product is heavily contaminated with pollutants and should be neither sold nor used by consumers.
  - At least one EcoAid benchmark and at least one voluntary contaminant standard of the industry (generally SG Leather) was exceeded.
  - A health risk to workers during manufacturing and sale is probably and the long-term risk to consumers is not excluded.
  - Significant environmental damage in the manufacturing of the product is possible.
- Grade 4 (deep red): 14%, 5 samples: Very heavily contaminated, very serious health risk
  - Product is very heavily contaminated with pollutants and be neither sold nor used by consumers.
  - At least one EcoAid benchmark and additionally at least one statutory limit or official benchmark was exceeded (however only 2 of the 9 parameters were available with a statutory limit). EcoAid recommends filing a complaint with the responsible regulatory authorities.
  - A health risk to workers in the manufacturing and sale and a long-term risk to consumers is likely.
  - Significant environmental damage is possible in the product manufacturing.

9.4 Samples Purchased in Germany

- All fur samples sold in Germany were found to be heavily or very heavily contaminated, each with two to four groups of pollutants.
- In all seven samples tested, not only the cautionary EcoAid benchmarks were exceeded but also the industry's own voluntary SG-Leather standards. The industry seems therefore to ignore the voluntary industrial standards.
- In one sample, because there is evidence of carcinogenic diphenylamines, it is suspected that forbidden dyes were used.
- In three samples, the limit recommended by the German Federal Institute for Risk Assessment BfR for carcinogenic PAHs was exceeded.
- Several samples have high levels of formaldehyde and alkylphenol ethoxalates. The content of alkylphenol ethoxylates is partially over about one gram per kilogramme of fur, above the EU limit for chemicals and chemical mixtures. Therefore it is suspected that an unlawful use of these chemicals took place during processing in the EU or countries with similar standards.

EcoAid advises against the sale and use of all of the fur samples tested for reasons of precautionary health protection. In the named cases, the intervention of regulatory authorities is required due to the strong suspicion of a violation of statutory obligations.



9.4.1 01-DE (Collar/Fox, BURBERRY, Hamburg): Not suitable for use, Industrial standards exceeded (Aromatic amines)

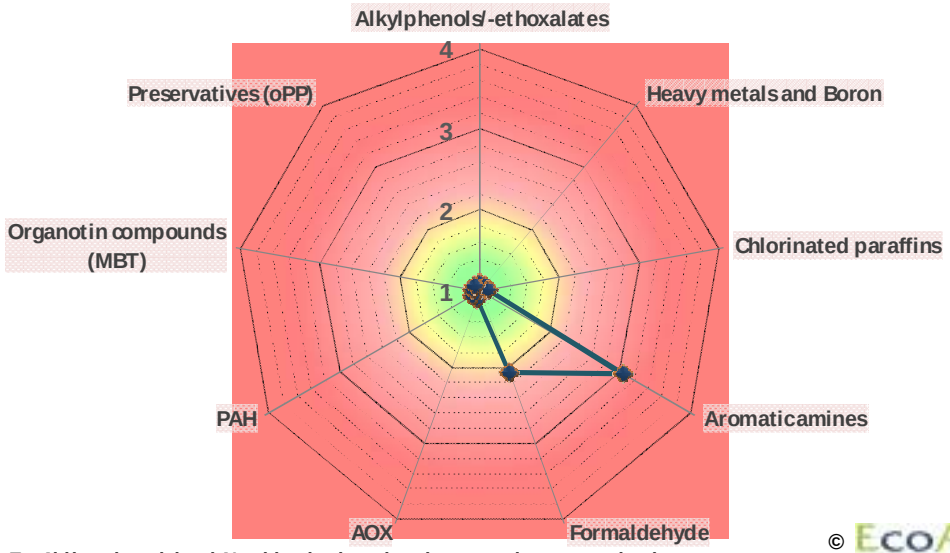
H 4674 FT-1

Sample no.	01-DE	Scores related to mg contaminant /					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	14	1
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		< 1	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30		620	3
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	31	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		0.34	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels

1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard

* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



© EcoAid

1: Below EcoAid benchmark level: No objection based on the contaminant sexamined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample contained a small amount of octylphenol ethoxylate, which is registered as a candidate on the EU REACH/SVHK and is considered a chemical of concern (CMR). However, no statutory limits were exceeded.
Furthermore it contained formaldehyde, which is also proposed for the candidate list of the REACH/SVHC. The EcoAid benchmark as well as the limit of the EU Toy Directive were exceeded.
Mercury and lead are present in trace amounts, but the total chromium content is particularly high with 1100 mg/kg. The chromium has only been partially dissolved, so that devaluation is not necessary.
The sample also contains a small amount of polycyclic aromatic hydrocarbons (PAHs).
The jet black fur was dyes. Harmful dyes were used to do this. The high content of aromatic amines led to a devaluation. Aniline was detected as well as phenylenediamine(PDA) isomers, the latter in the second-highest concentration ever measured in these tests. It surpassed even the industrial standards of the leather and fur industry by more than 20 fold. PDAs are classified as probable carcinogens according to the CLP Regulation (EU Packaging Directive). The sample was probably heavily contaminated through the use of improper dyes.

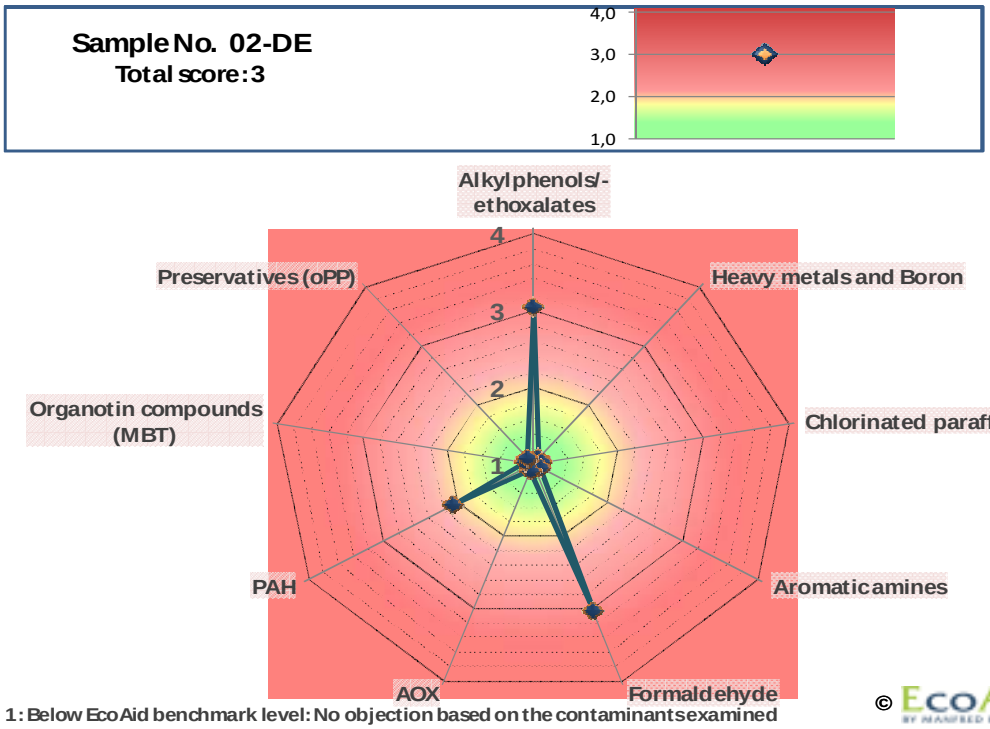
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. EcoAid recommends bringing the sale of the product to the attention of the responsible authorities, as there is the suspicion that forbidden harmful dyes were used.

9.4.2 02-DE (Scarf/Racoon dog, YVES SALOMON at Breuninger, Stuttgart) : Product warning, Industrial standards (APEO, Formaldehyde) and EcoAid standards (PAH) exceeded

H 4674 FT-2

Sample no.	02-DE	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	170	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		< 1	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	240	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		1.3	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1		0.21	2
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample is significantly contaminated with the sensitizing and carcinogenic formaldehyde. The measured value is almost six times higher than the limit of the EU Toy Directive and the EcoAid benchmark. The industrial SG standard was also exceeded by this sample.
The concentration of the substance NPEO (nonylphenol ethoxylate) is also greatly elevated and is above the EcoAid and the industrial standards.
In addition, the sample contains carcinogenic PAHs, whose concentration is above the EcoAid benchmark. A total of three parameters from the EcoAid standards and two parameters from the industrial standards were exceeded.

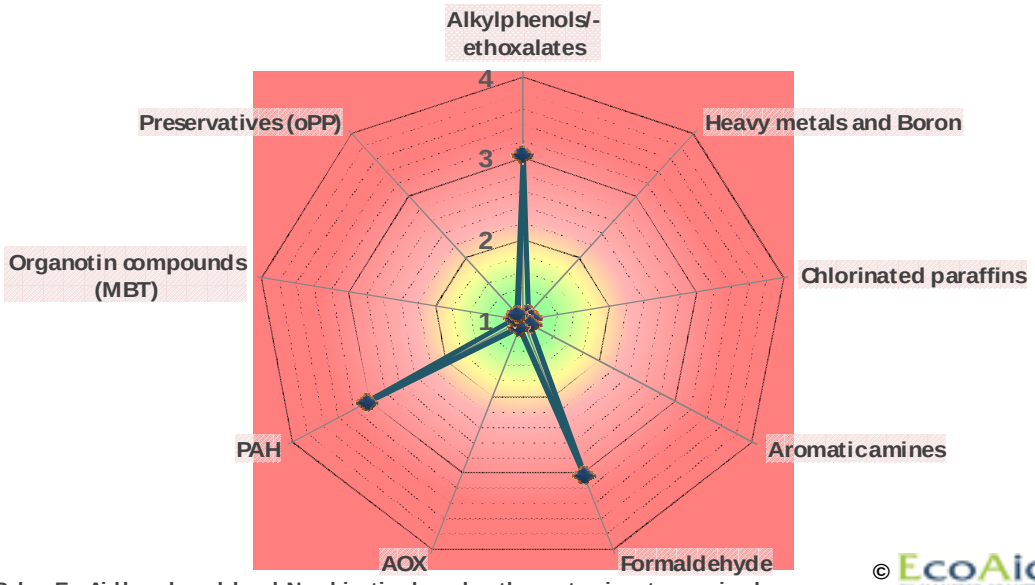
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.4.3 03-DE (Colar/Fox, PUMPKIN at Wöhrl, Munich): Product warning, Industrial standards exceeded (APEO, Formaldehyde, PAH)

H 4674 – FT- 3

Sample no.	03-DE	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	578	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		9	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02		< 0.02	1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	150	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		6.6	2
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1		2.88	3
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample exceeds the benchmarks from EcoAid and the industrial standards for three pollutants – formaldehyde, carcinogenic PAHs and alkylphenol ethoxylates. For the cumulative value of the PAHs as well as the cumulative value of the carcinogenic PAHs, this sample is at the top of the executed test program. Were the PAH limit for consumer products of 0.2 mg/kg, suggested by the German Federal Institute for Risk Assessment BfR, raised to being a statutory limit – a long overdue step – the limit would be exceeded by this sample 14 fold which would therefore result in a regulatory complaint.

The fur is also contaminated with chromium and was therefore tanned using the chromium process, which is forbidden in Europe. However, as the chromium is only partially dissolvable, there is no devaluation for this parameter.

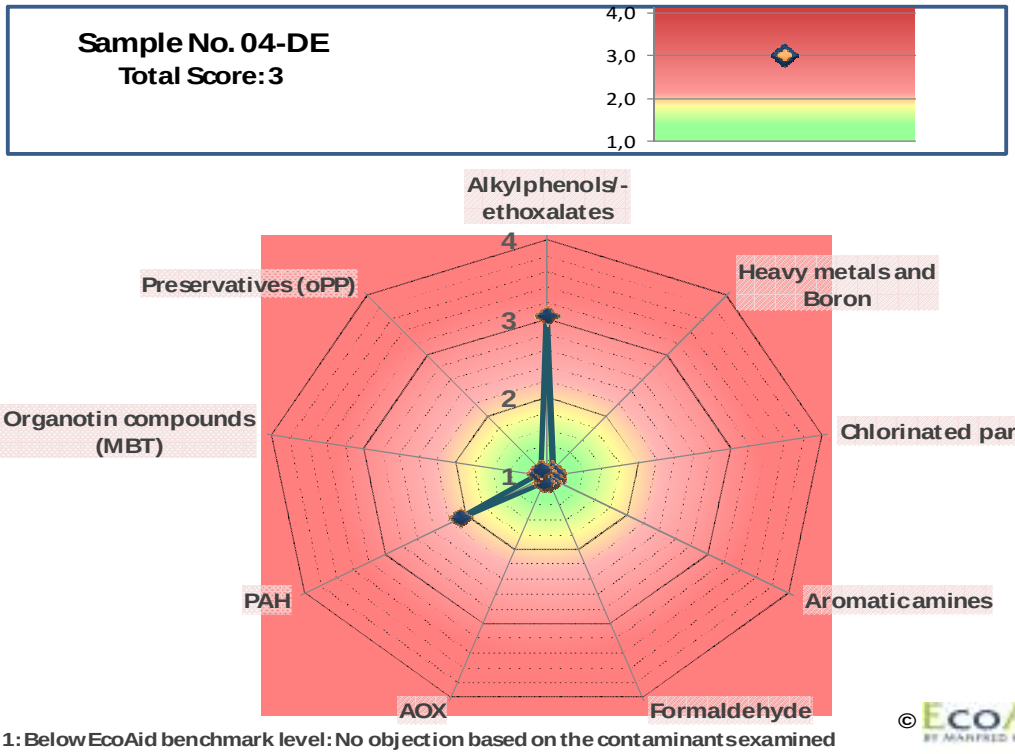
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.4.4 04-DE (Jacket edging/Racoon Dog, OAKWOOD at Bazar R., Leipzig): Not suitable for use, Industrial standards (APEO) and EcoAid standards (PAH) exceeded

H 4674 FT- 4

Sample no.	04-DE	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	433	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		80	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30		n.n.	1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	19	1
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		3.1	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1		0.69	2
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample was contaminated with formaldehyde, however the EcoAid benchmark was not exceeded.
The contamination with alkylphenol ethoxylate NPEO was high and is above the EcoAid benchmark and even exceeds the industrial standards by four times.
Furthermore the contamination with carcinogenic PAHs was above the EcoAid standards. Were the PAH limit for consumer products of 0.2 mg/kg, suggested by the German Federal Institute for Risk Assessment BfR, raised to being a statutory limit – a long overdue step – the limit would be exceeded by this sample 3.5 fold which would therefore result in a regulatory complaint. The lead and mercury contamination was low, but the total chromium value as determined by the total extraction was very high and is in second place in the overall test. Chromium was also detected in the eluate in significantly higher concentrations, but which were still slightly below the EcoAid benchmark value. The sample was investigated further for the highly poisonous chromium (VI). This substance was not detectable with a detection limit of 3 mg/kg.
Dyeing could not be excluded from a visual inspection of the sample. However, the investigation of the fur for harmful amino compounds originating from non-suitable dyes showed negative results.

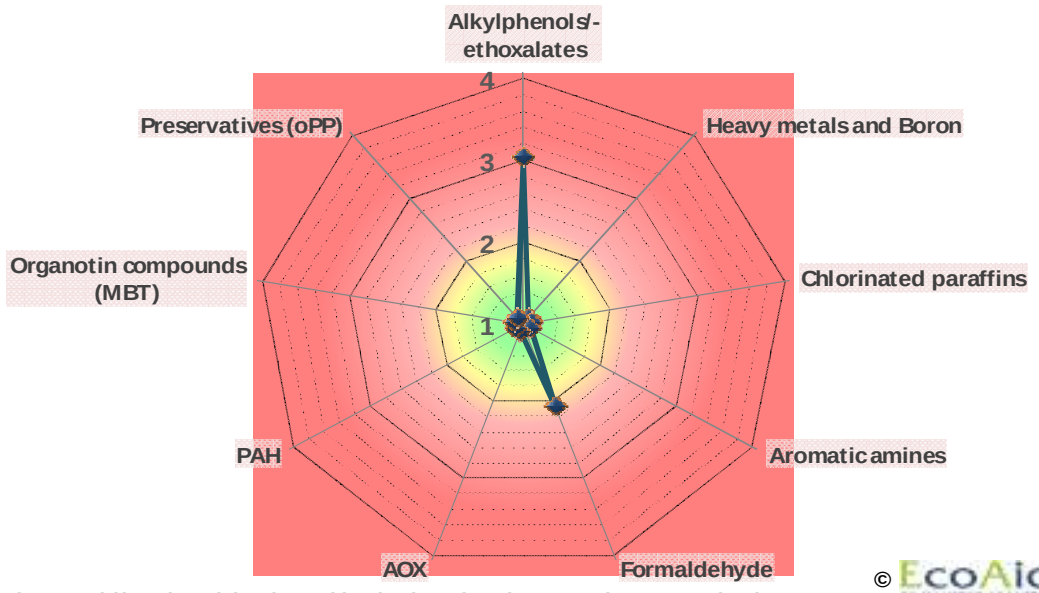
Due to the described contamination, the product is not recommended.

9.4.5 05-DE (Vest/Fox, KOOKAI, Berlin): Not suitable for use, Industrial standards (APEO) and EcoAid standards (Formaldehyde) exceeded

H 4674 FT – 5

Sample no.	05-DE	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	166	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		18	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	50	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample contains formaldehyde, which is easily emitted as a gas, in concentrations above the EcoAid benchmark and above the EU Toy Directive. The content of alkylphenol ethxylates and alkylphenols is not only above the EcoAid benchmark but also above the benchmark of the SG standards of the leather industry.
The black fur sample was probably dyed. The amine aniline was detected so the use of harmful dyes cannot be excluded. The values for lead and mercury were relatively low, but the total chromium value, calculated in the total extraction, is quite high so that it can be assumed that the fur was tanned with chromium salts, which is banned in Europe. As the chromium content in the eluate was still under the EcoAid benchmark, there is no devaluation for this parameter.

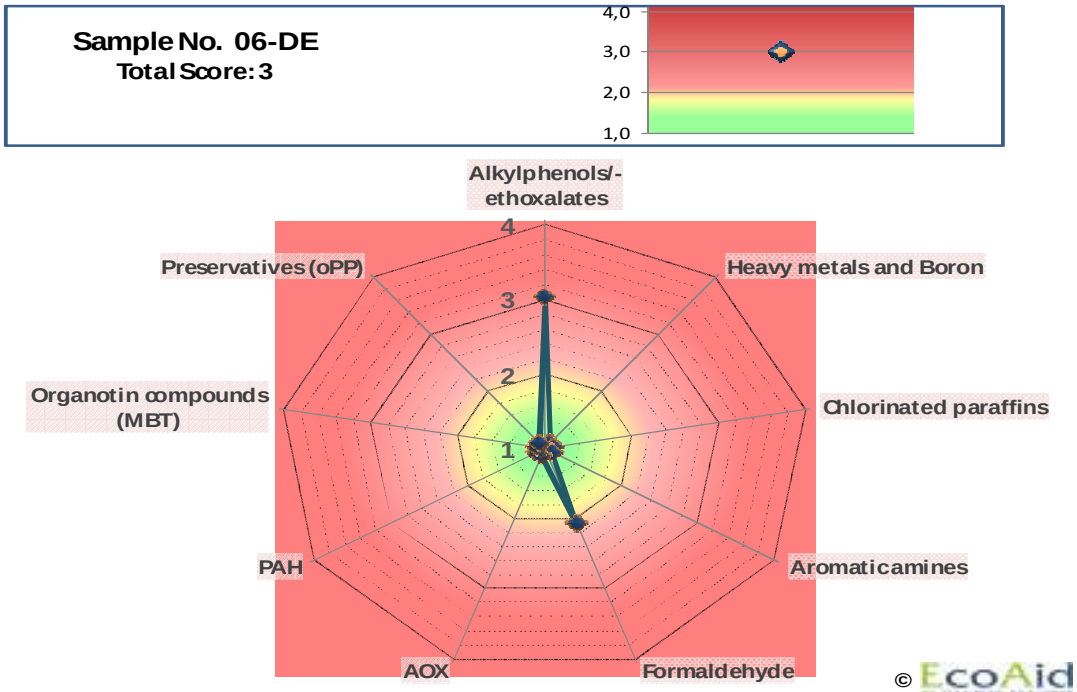
Overall, due to the described contamination, the product is not recommended.

9.4.6 06-DE (Hood/Fox, AIRFIELD, Berlin): Not suitable for use, Industrial standards (APEO) and EcoAid standards (Formaldehyde) exceeded

H 4674 FT-6

Sample no.	06-DE	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	133	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8		0.1	1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02		< 0.02	1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	45	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

The formaldehyde measured in this sample is above the EcoAid benchmark. This substance is carcinogenic and a proposed candidate for the EU REACH/SVHC list. The measured value was also 1.5 times above the limit of the EU Toy Directive. In addition, contamination with chromium, mercury and lead was detected in the sample, but they were below the EcoAid benchmark. Alkylphenol ethoxyaltes exceeded the EcoAid benchmark and even the industry's own standard.

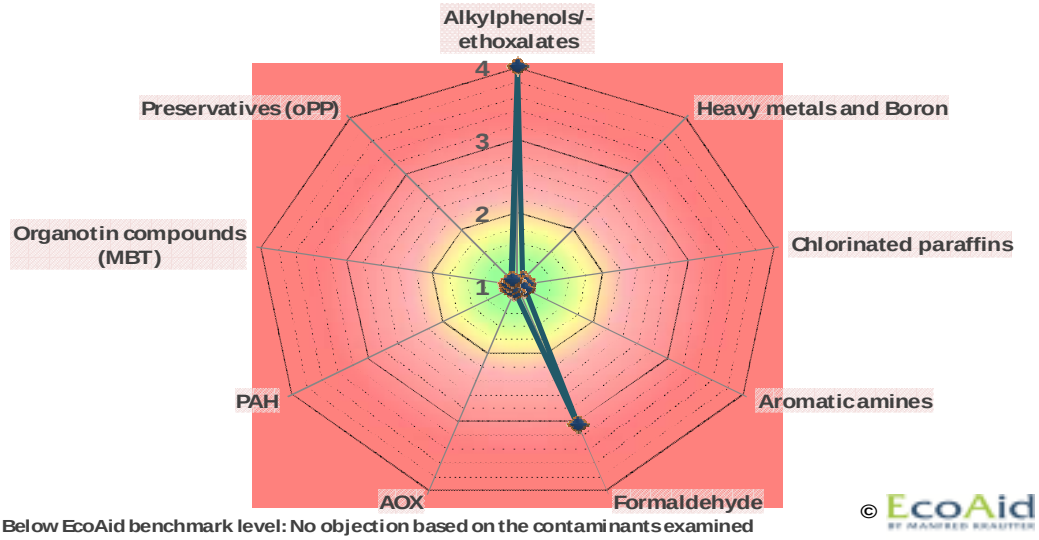
Overall, due to the described contamination, the product is not recommended.

9.4.7 07-DE (Hood/Racoon Dog, NAPAPIJRI at Nicki's, online): Product warning, Statutory standards (APEO) and Industrial standards (Formaldehyde) exceeded / Children's clothes

H 4674 FT- 7

Sample no.	07-DE	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	1827	4
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8		< 0.1	1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		3	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	200	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	4

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

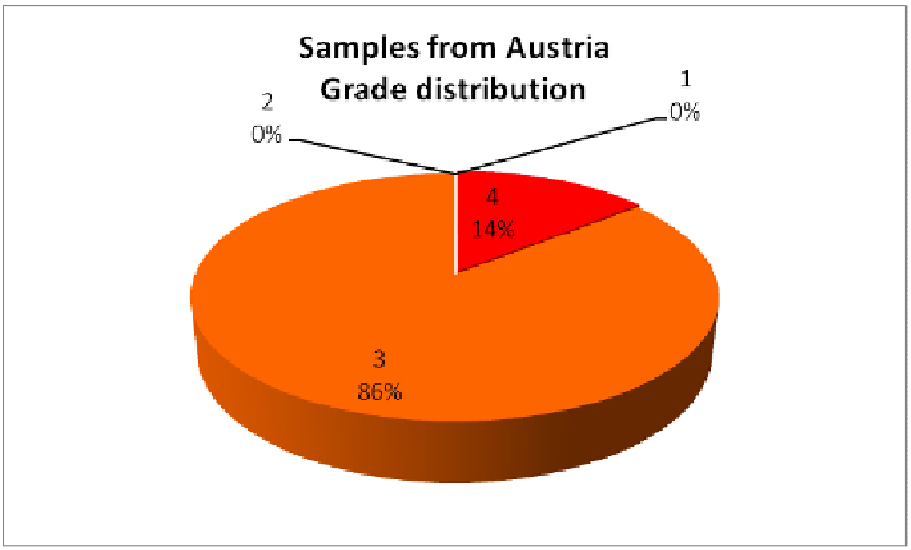
This sample contains formaldehyde, which is carcinogenic and sensitising, in highly elevated concentrations. Both the EcoAid benchmark value and the less stringent industrial standards were exceeded.
There were extremely high levels of contamination with the toxic alkylphenol ethoxylates OPEO and NPEO, the use of which is prohibited in Europe. The OPEO value is highest in the entire test. Added to this is the contamination with NPEO, which with 0.11% is so high that sales of the product in Europe wouldn't be allowed if it were a chemical or a chemical mixture. For items such as fur there is a regulatory gap. If the goods were processed in Europe, there would be the strong suspicion of a violation of EU chemicals legislation. Therefore, EcoAid recommends filing a complaint with the responsible regulatory authorities.
The formaldehyde content is well above the EcoAid benchmark and is also above the industry standards.
The total chromium value in the total extraction is high, but the eluate test shows that it can only be washed out to a limited extent, so there is no devaluation.

The affected product is children's clothing. Due to children's higher sensitivity towards harmful substances the health risk is especially increased.
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. EcoAid recommends bringing the sale of the product to the attention of the responsible authorities.
Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.5 Samples Purchased in Austria

- All fur samples sold in Austria were found to be heavily or very heavily contaminated with up to four hazardous substance groups.
- In all seven samples tested, not only the cautionary EcoAid benchmarks were exceeded but also the industry's own voluntary SG-Leather standards. The industry seems therefore to ignore the voluntary industrial standards.
- In one sample, because there is evidence of carcinogenic diphenylamines, it is suspected that forbidden dyes were used. In another, the recommended limit from the German Federal Institute for Risk Assessment BfR for carcinogenic PAHs was exceeded.
- Several samples have very high levels of formaldehyde, which must be classified as a health hazard. In no other country were similar levels of contamination detected of this allergenic and carcinogenic problematic substance.
- The content of alkyl phenol is partly above one gram per kilogramme of fur and thereby above the EU limit for chemicals and chemical mixtures. One fur sample contained 2.5 grams of these chemicals per kilogramme– the highest value in this test program. Therefore there is the suspicion of unlawful use of these chemicals if the processing occurred in the EU or a country with similar standards.

EcoAid advises against the sale and use of all of the fur samples tested for reasons of precautionary health protection. In the named cases, the intervention of regulatory authorities is required due to the strong suspicion of a violation of statutory obligations.

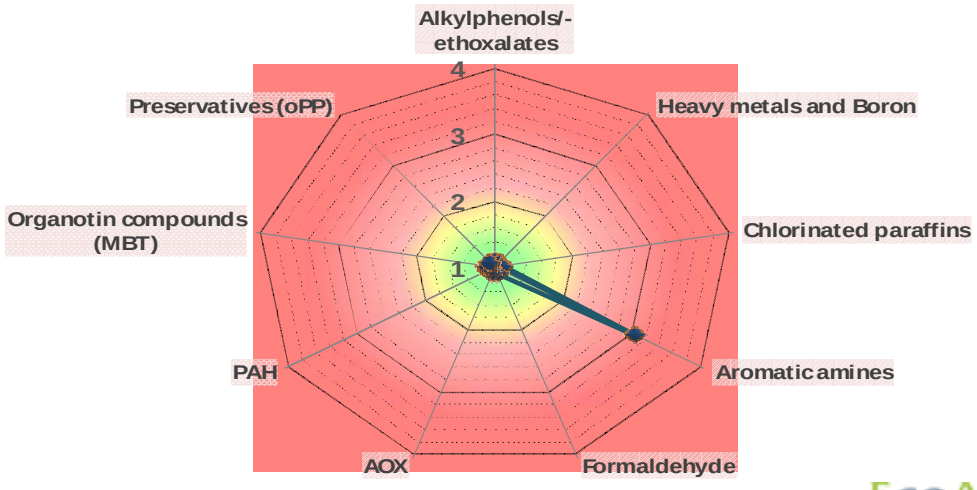


9.5.1 01-AT (Jacket collar/Fox, BASLER at KLeider Bauer, Vienna): Not suitable for use, Industrial standards (Aromatic amines) exceeded

H 4674 FT- 8

Sample no.	01-AT	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	25	1
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		3	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02		< 0.02	1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30		560	3
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	13	1
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminant sexamined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

The very high value of phenylenediamine isomers, which greatly exceeds both the EcoAid benchmark and the industrial standards, stood out for this sample. The fur sample was apparently dyed black with harmful dyes. This is also indicated by the aniline content.

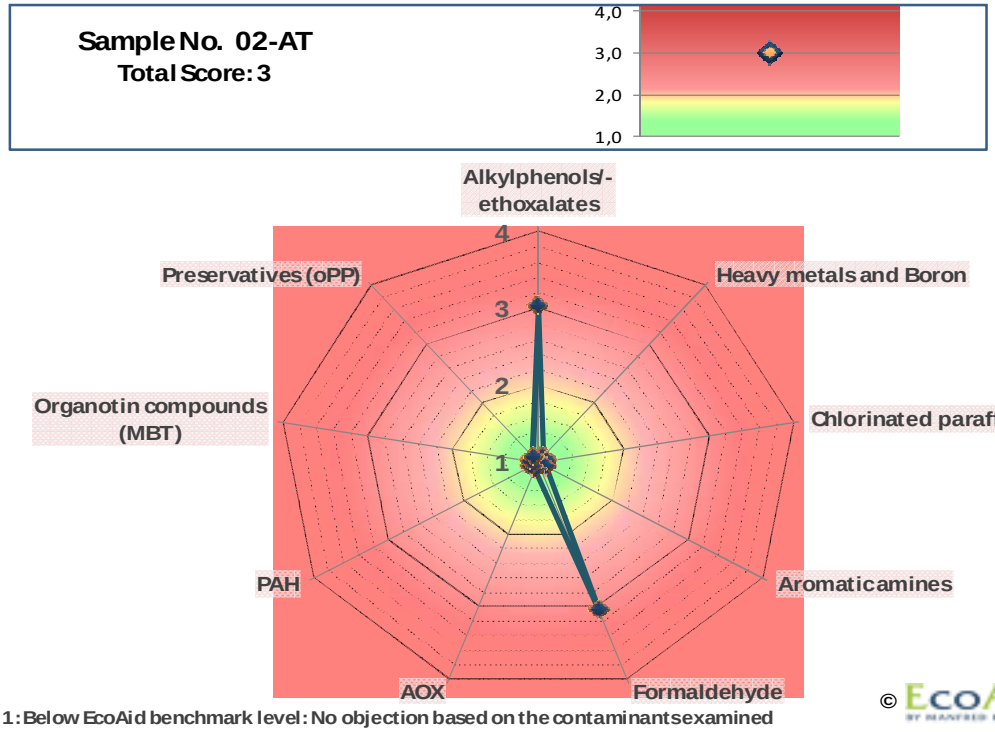
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous and environmentally damaging amines from dyes. EcoAid recommends bringing the sale of the product to the attention of the responsible authorities, as there is the suspicion that forbidden harmful dyes were used.

9.5.2 02-AT (Overall hood/Racoon Dog, MONCLER at Steffl Kids Floor, Vienna): Product warning, Industrial standards (Formaldehyde, APEO) exceeded / Children's clothes

H 4674 FT – 9

Sample no.	02-AT	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	365	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02		< 0.02	1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	160	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



In this sample the formaldehyde content is well above the EcoAid benchmark and even above those of the industry.
The alkylphenol NPEO significantly exceeds the industrial benchmarks and those from EcoAid. Nonylphenol (NP) was detected in small amounts, as was mercury, lead and chromium.

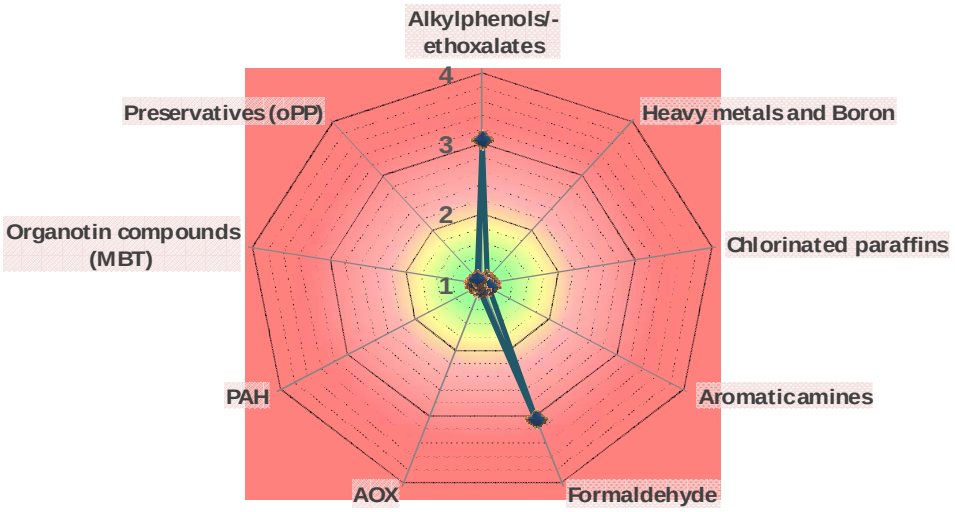
The affected product is children's clothing. Due to children's higher sensitivity towards harmful substances the health risk is especially increased.
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals.
Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.5.3 03-AT (Hood/Racoon Dog, FRIEDA&FREDDIES at Dohnal Steffl Kids Floor, Vienna: Product warning, Industrial standards (APEO, Formaldehyde) exceeded / Children's Clothes

H 4674 FT – 10

Sample no.	03-AT	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	330	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8		< 0,1	1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		75	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02		< 0.02	1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	170	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample contains too much formaldehyde. The calculated value is about five times higher than the limit of the EU Toy Directive and the EcoAid benchmark.
The measured value of the alkylphenol NPEO, which is suspected of being carcinogenic and harming foetuses in the womb, is high compared to the EcoAid standards as well as the industrial standards.
The high proportion of chromium suggests chromium tanning. The chromium value in the eluate is the fourth highest found in all samples, however it was just under the EcoAid benchmark value. The sample was also analysed for chromium (VI). This substance was not detectable with a detection limit of 3 mg/kg.

The affected product is children's clothing. Due to children's higher sensitivity towards harmful substances the health risk is especially increased.
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals.
Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

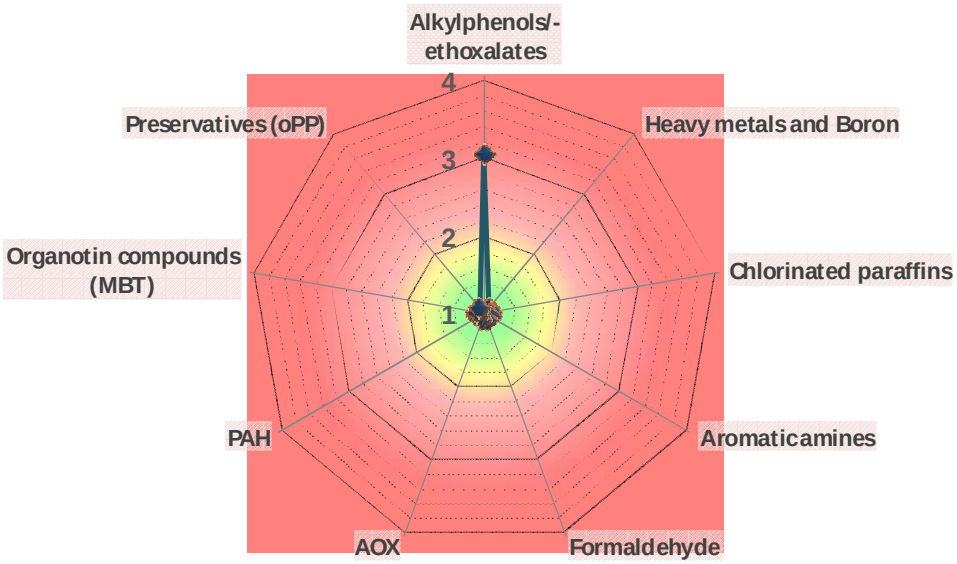
9.5.4 04-AT (Hood/Racoon Dog, BURBERRY, Parndorf): Not recommended, Industrial standards (APEO) exceeded

H 4674 FT – 11

Sample no.	04-AT	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	353	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02		< 0.02	1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	28	1
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton

Sample No. 04-AT
Total Score: 3



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

The nonylphenol ethoxylate proportion of this sample is too high, even measured by the standards of the leather industry. Overall, due to the described contamination, the product is not recommended.

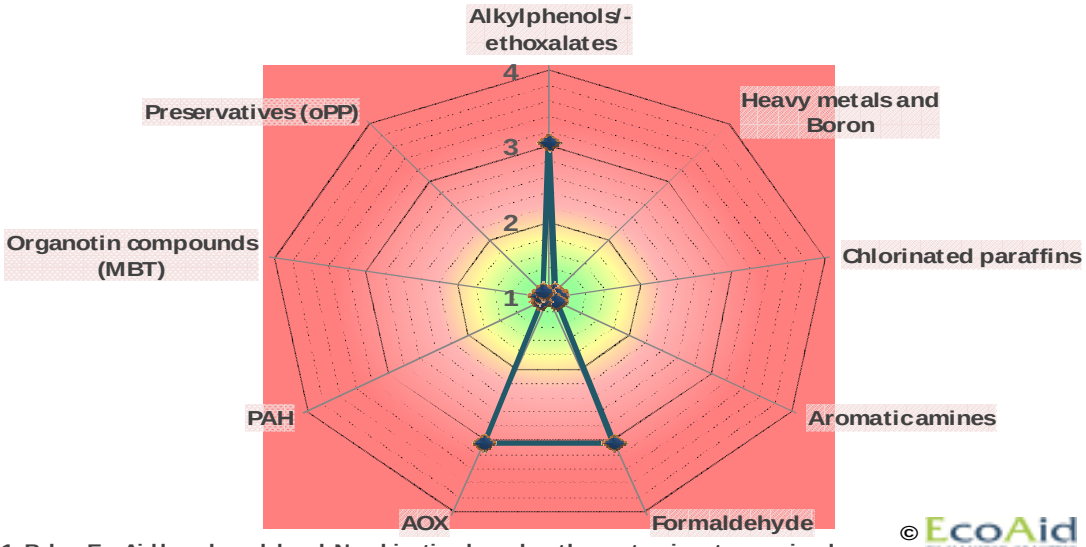
9.5.5 05- AT (Vest hood/Racoon dog, SPORTALM, Parndorf): Product warning, Industrial standards (APEO, Formaldehyde, AOX) exceeded

H 4674 – 12

Sample no.	05-AT	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	265	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		55	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	250	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5		40	3
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
	Total score (worst individual score of a contaminant)						3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton

Sample No. 05-AT
Total Score: 3



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample is heavily contaminated with three groups of pollutants. The formaldehyde content is considerably higher than the EcoAid benchmark and the industrial standards. Furthermore, AOX (absorbable organic halogens compounds) were found in an amount that is significantly above the EcoAid benchmark and even exceeds the industrial standard by 8

fold. The SIN lists various AOX individual substances with respect to a ban. Some are carcinogenic.
The alkylphenol NPEO is not only above the EcoAid benchmark but also above the industrial standard "SG – Leather products inspected for hazardous substances".
The total chromium value indicates chromium tanning. Chromium is also detectable in the eluate, but still below the EcoAid benchmark. The sample was also analysed for chromium (VI). This substance was not detectable with a detection limit of 3 mg/kg.

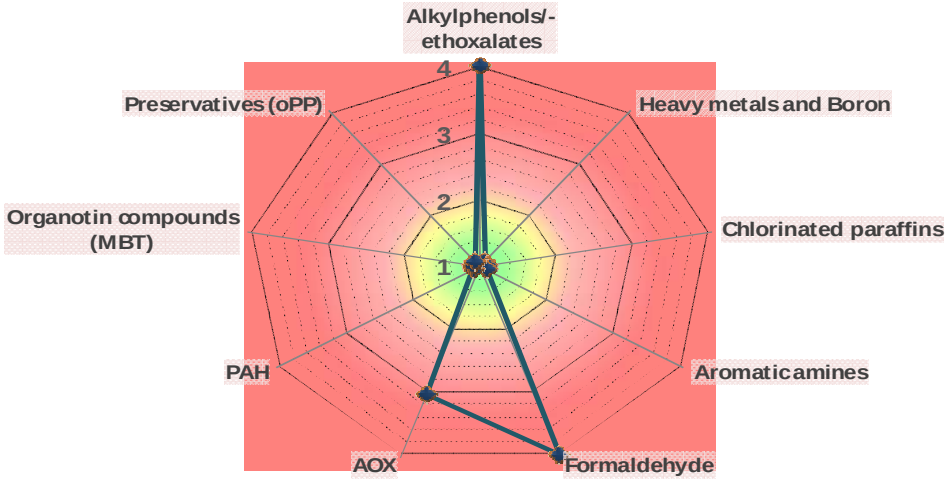
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.5.6 06-AT (Hood/Racoon Dog, DIADORA at Dream Fashion, Wals-Siezenheim): Product warning – Statutory standards (APEO, Formaldehyde) and Industrial standards (AOX) exceeded / Children's clothes

H4674 FT – 13

Sample no.	06-AT	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	2513	4
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	550	4
8	AOX (adsorbable organic halogens)	<5	>=5	>=5		15	3
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	4

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



© EcoAid

1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample is one of the most contaminated in the entire test and is open to criticism if only for its high formaldehyde content, the lightest in the entire study. According to the recommendation of the German Federal Institute for Risk Assessment (BfR), labelling of the fur would be necessary. The value of the carcinogenic and allergenic substance itself exceeds the industry standard by 7 fold.

The NPEO value is also the highest of all sample examined here. In Europe its use is prohibited. The NPEO content was 2.5 grams per kilogramme. It is so high that the sale of the product would not be allowed in Europe if it were dealing with a chemical or chemical mixture. For items like furs, however, there is a regulatory gap. If the product were processed in Europe, there is the strong suspicion of violations of the EU Chemicals Regulation. Therefore, EcoAid recommends filing a complaint with the responsible regulatory authorities.

Finally, the content of absorbable organic halogens (AOX) leads to a third devaluation. This sample exceeded the own standards of the industry in three cases.

The affected product is children's clothing. Due to children's higher sensitivity towards harmful substances the health risk is especially increased.
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals.
EcoAid recommends bringing the sale of the product to the attention of the responsible authorities.
This should include checking whether the production included the prohibited application of alkylphenol ethoxylates.
Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

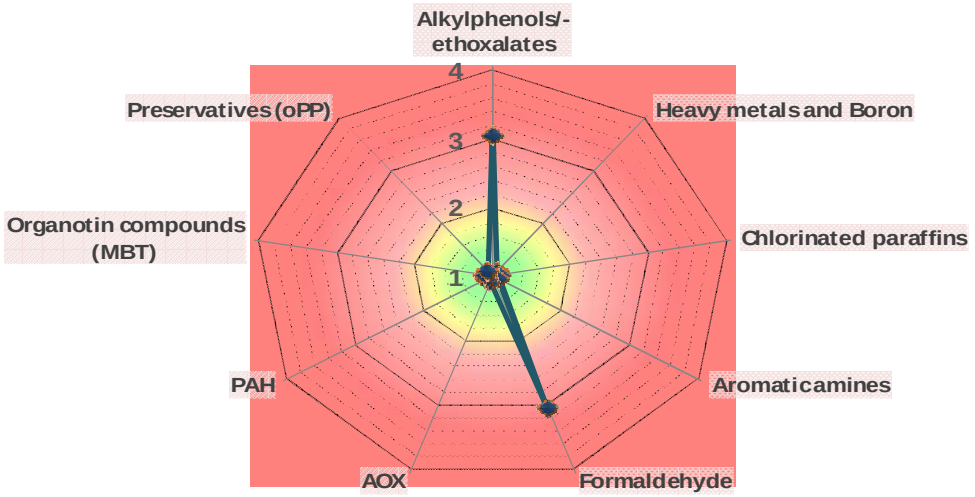
9.5.7 07-AT (Vest edging/Racoon dog, SLUIS LEDER, Wals-Siezenheim): Product warning, Industrial standards (APEO, Formaldehyde) exceeded

H4674 FT – 14

Sample no.	07-AT	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	436	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8		0.3	1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		95	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	300	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5		2.5	1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton

Sample No. 07-AT
Total Score: 3



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

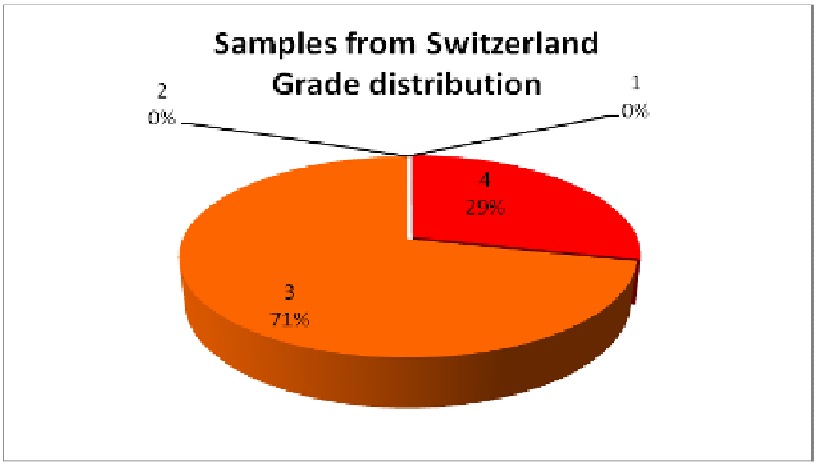
The second highest formaldehyde value in the entire test was found in this sample. It is significantly above the EcoAid benchmark and 4 times above the maximum value recommend by the industry itself.
The content of NPEO is also above the benchmark values of EcoAid and the industry.
The sample contained, determined by total extraction – the highest lead and chromium content of all 35 individual samples being investigated. The values of both heavy metals in the eluate, which is the leachable proportion, were in each case the second highest detected. Nevertheless, they were slightly below the EcoAid benchmark values. The chromium content of 18 grams per kilogramme of fur indicates chromium tanning. The sample was also analysed for chromium (VI). This substance was not detectable with a detection limit of 3 mg/kg.

The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.6 Samples purchased in Switzerland

- All fur samples sold in Switzerland were found to be heavily or very heavily contaminated with up to four hazardous substance groups.
- In all seven samples tested, not only the cautionary EcoAid benchmarks were exceeded but also the industry's own voluntary SG-Leather standards. The industry seems therefore to ignore the voluntary industrial standards.
- In one sample, the internationally banned insecticide DDT was detected in a concentration range that suggests deliberate application. There is the strong suspicion that in the treatment of this fur not only a national Swiss law but also the Stockholm Convention of the United Nations was violated.
- In another sample chlorinated paraffins were detected – these environmental chemicals, like DDT, were only detected in one sample from Switzerland and not detectable in any of the other samples tested.
- Several samples have very high levels of formaldehyde, which must be classified as a health hazard.
- In two samples, the limit recommended by the German Federal Institute for Risk Assessment BfR for carcinogenic PAHs was exceeded.
- The content of alkyl phenol is partly above one gram per kilogramme of fur and thereby above the EU-Swiss limit for chemicals and chemical mixtures. One fur sample contained 2.5 grams of these chemicals per kilogramme– the highest value in this test program. Therefore there is the suspicion of unlawful use of these chemicals if the processing occurred in the EU or a country with similar standards.
- One sample also contained lead in concentrations in the range of the EcoAid benchmark.

EcoAid advises against the sale and use of all of the fur samples tested for reasons of precautionary health protection. In the named cases, the intervention of regulatory authorities is required due to the strong suspicion of a violation of statutory obligations.

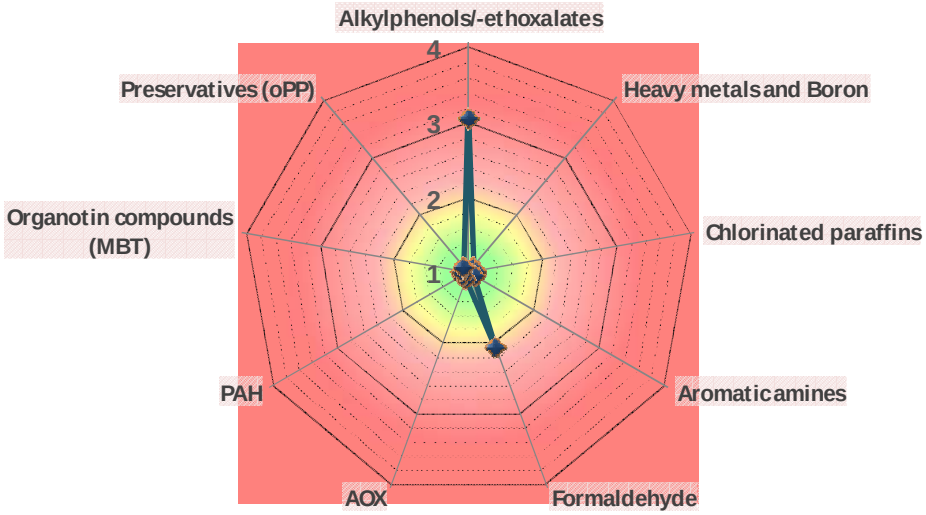


9.6.1 01-CH (Cap/Racoon dog, MAX MARA, Zürich): Not suitable for use, Industrial standards (APEO) and EcoAid standards (Formaldehyde) exceeded

H4674 FT – 15

Sample no.	01-CH	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	284	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		33	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*		n.n.	1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	55	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		0.48	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample, in comparison to other samples in this test, only contains a medium strength contamination with pollutants. The concentrations of NPEO and formaldehyde are above the EcoAid benchmark values.
Of the aromatic amines, aniline and the toxic methoxyaniline were detected in significant concentrations. Therefore the use of a non-approved dye in the colouring of the fur green cannot be excluded.
The content of carcinogenic and allergenic formaldehyde exceeded the EcoAid benchmark and the limit of the EU Toy Directive.
In addition, this sample contains high total chromium content (total extraction), of which only a relatively small proportion is dissolvable (eluate) and therefore does not lead to devaluation. The fur was obviously tanned with chromium, which is a banned process in Europe.

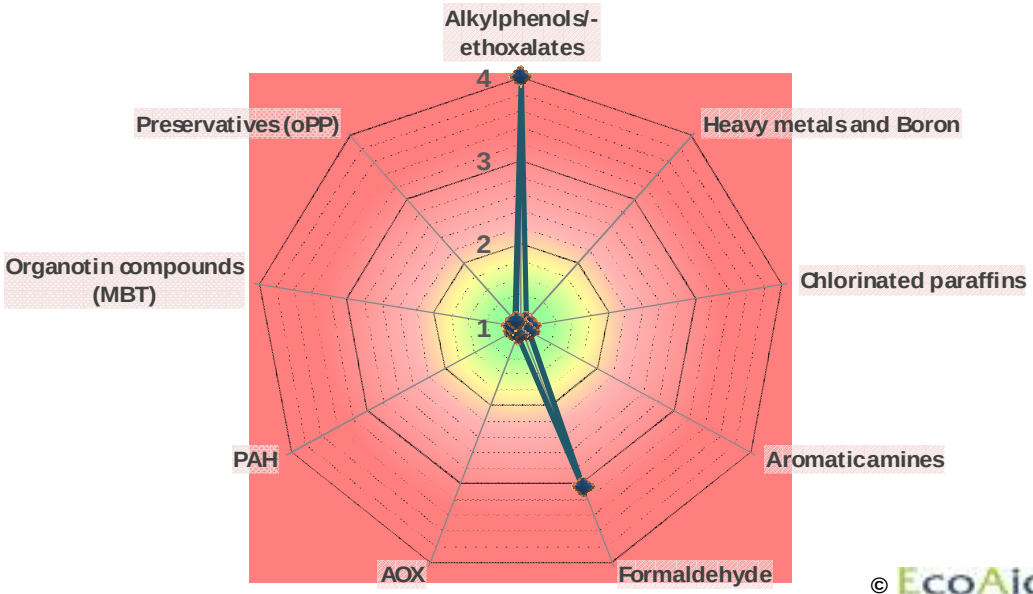
Overall, due to the described contamination, the product is not recommended.

9.6.2 02-CH (Hood/Fox, MODISSA, Zürich): Product warning – Statutory standards (APEO) and Industrial standards (Formaldehyde) exceeded

H4674 FT – 16

Sample no.	02-CH	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	1205	4
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		48	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*		n.n.	1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	210	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		0.69	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1		0.05	1
						Total score (worst individual score of a contaminant)	4

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample contains a high concentration of the allergenic and carcinogenic chemical - formaldehyde. The EcoAid benchmark and also the benchmark of the industry itself were clearly exceeded.
The NPEO content is so high with 1.2 grams per kilogramme that the sale of the product in Europe would not be allowed if it were dealing with a chemical or a chemical mixture. For items such as furs there is a regulatory gap. If the goods were processed in Europe, there would be the strong suspicion of a violation of EU chemicals legislation. Therefore, EcoAid recommends filing a complaint with the responsible regulatory authorities.
In addition there are polycyclic aromatics, in small concentrations, including proven carcinogenic representatives of this substance group.
Lead and mercury traces were detected. However, the high chromium content (total extraction) may imply chromium tanning. The soluble chromium content in the eluate is still below the EcoAid benchmark.

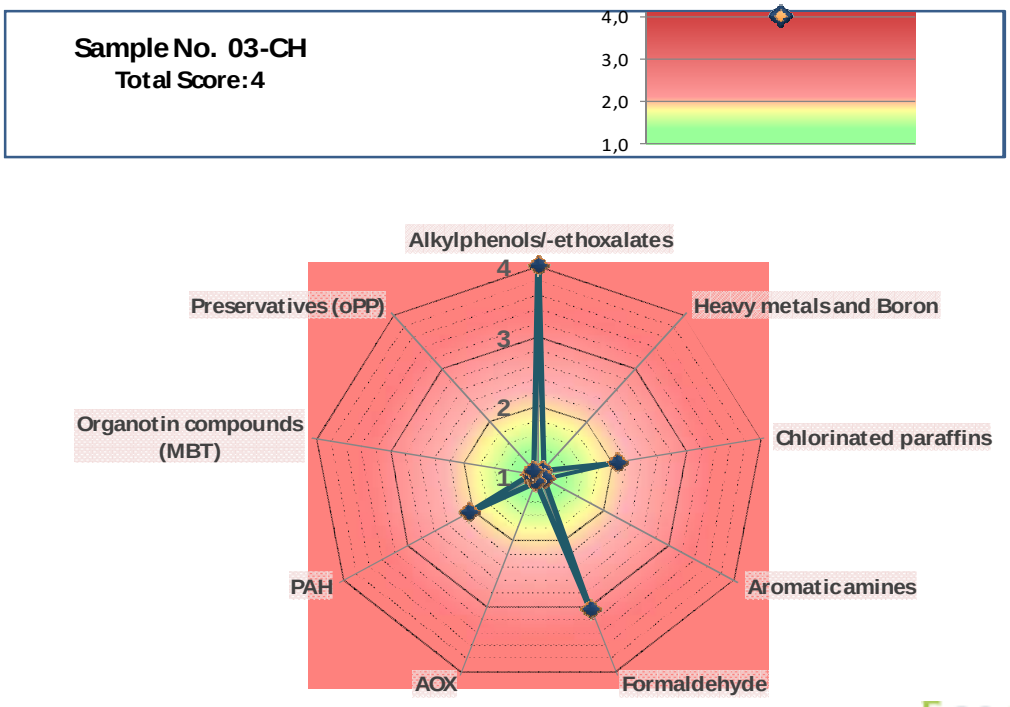
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. EcoAid recommends bringing the sale of the product to the attention of the responsible authorities. This should include checking whether the production included the prohibited application of alkylphenol ethoxylates.
Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.6.3 03- CH (Boa/Fox, GIORGIO PASSIGATTI at Dublanc, Zürich): Product warning – Statutory standards (APEO), Industrial standards (Formaldehyde) and EcoAid standards (Chlorinated paraffins, PAHs) exceeded

H4674 FT – 17

Sample no.	03-CH	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	1676	4
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		47	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*		990	2
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	83	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		2.7	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1		0.34	2
						Total score (worst individual score of a contaminant)	4

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This is the only sample in which the harmful and environmentally damaging chemical, chlorinated paraffin, was detected. The concentration reached almost a gram per kilogramme of fur. EcoAid assumes that the medium-chain chlorinated paraffins detected here are similarly toxic as the SCCPs that are already heavily regulated by law, which will soon be considered by the EU chemicals legislation REACH. Norway has already called for a ban. The EcoAid benchmark for this substance was considerably exceeded, the amount was only slightly below the industrial standard.

Two more substances on the REACH candidate list with high concentrations in the sample were alkylphenol ethoxylate OPEO and NPEO. Here, the measured value of OPEO was the second highest in this test. The NPEO content is so high with 1.4 grams per kilogramme of fur that the sale of the product in Europe would not be allowed if it were dealing with a chemical or a chemical mixture. For items such as furs there is a regulatory gap. If the goods were processed in Europe, there would be the strong suspicion of a violation of EU chemicals legislation. Therefore, EcoAid recommends filing a complaint with the responsible regulatory authorities.

Formaldehyde exceeded both the EcoAid and the industrial benchmarks.

The PAH values were also above the EcoAid benchmark. Were the PAH limit for consumer products of 0.2 mg/kg, suggested by the German Federal Institute for Risk Assessment BfR, raised to being a statutory limit – a long overdue step – the limit would be exceeded by this sample 2 fold which would therefore result in a regulatory complaint.

In addition the sample contained aniline and traces of lead and mercury.

There was a high proportion of chromium (total extraction) in the product which indicates chromium tanning. The water-soluble chromium content was still below the EcoAid benchmark value so no devaluation occurred. The sample was also analysed for chromium (VI). This substance was not detectable with a detection limit of 3 mg/kg.

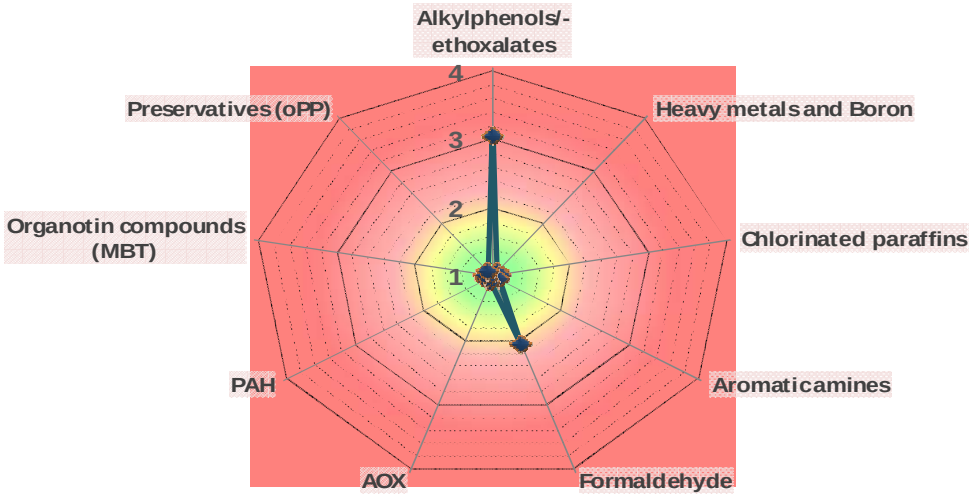
Overall, the sample showed excessive contamination in four parameters at the same time. The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. EcoAid recommends bringing the sale of the product to the attention of the responsible authorities. This should include checking whether the production included the prohibited application of alkylphenol ethoxylates and chlorinated paraffins.

9.6.4 04-CH (Key fob/Mink, DUBLANC, Zürich): Not suitable for use, Industrial standards (APEO) and EcoAid standards (Formaldehyde) exceeded

H4674 FT- 18

Sample no.	04-CH	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	825	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	63	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



© EcoAid

1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample contains formaldehyde and the alkylphenol NPEO in concentrations above the EcoAid benchmark. The value for NPEO is also above the industrial standard. Overall, due to the described contamination, the product is not recommended.

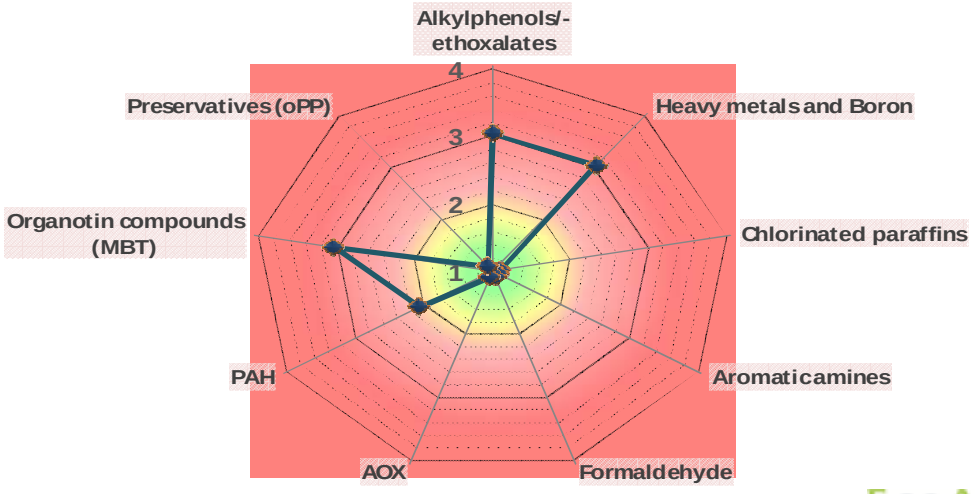
9.6.5 05-CH (Cab/Mink, KOHLER, Basel): Product warning – Statutory standards (DDT), Industrial standards (APEO, Heavy metals, Organotin compounds) and EcoAid standards (PAHs) exceeded

H4674 FT – 19

Sample no.	05-CH	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	130	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8		0.8	3
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02		< 0.02	1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1		1.2	3
7	Formaldehyde	< 30	>= 30	>=75	>=500**	29	1
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		3	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1		0.92	2
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton

Further findings: 79 mg DDT/kg fur.



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample contained the prohibited insecticide DDT, which the European and other OECD countries have banned for decades and which has been banned internationally with only a few exceptions since the Stockholm Convention of the United Nations in 2001. The concentration is so high that an unintentional contamination is unlikely and deliberate application probable. It was detected in an amount 100 fold above the benchmark values of the regulations of some international standards. The product is not salable due to the obvious use of a forbidden chemical. Conceivable is DDT treatment to prevent insect infestation during storage or transport or to fight an insect infestation.

EcoAid contacted the Swiss authorities in July 2011 for information concerning the legal status of such a DDT finding. The following are the questions and the responses of the FOEN:

Response of the Federal Office for the Environment, Bern 29.7.2011 to a request from EcoAid (excerpt):

...

I can answer your questions briefly as follows:

* Are there any limits in Switzerland for DDT concerning the putting of commodities onto the market e.g. clothing limits and how high are they?

The prohibition on manufacturing, putting on the market, import and application of particular halogenated organic substances like DDT is regulated in Switzerland by Annex 1.1 of the Chemical Risk Reduction Regulation (ChemRRV, SR 814.81 http://www.admin.ch/ch/d/sr/c814_81.html). You will see that textiles and leather goods containing these halogenated organic compounds may not be imported for professional or commercial purposes. A limit is not set; we only know the expression "necessary impurity". This is also analogous to the definition in Annex A of the Stockholm Convention, which speaks of "unintentional trace contaminants".

* Which authorities are responsible for the control or security of such products?

In Switzerland, the cantons are responsible for the enforcement of legislation on chemicals. So is there were the suspicion that a company is importing DDT contaminated consumer products into Switzerland, the canton in which this company has its active headquarters or also the canton border, if the offense were even noticed by customs.

* Which laws and enforcement procedures are provided in Switzerland for the suspicion that a violation of the Stockholm Convention mentioned above exists?

See above. The state would need to consider how the situation is and what sanctions would be available. In Switzerland the prohibitions of the Stockholm Convention are implemented in the above-mentioned ChemRRV, we have no actual POP regulations like in the EU.

* Which authorities are responsible for compliance with the Convention in Switzerland?

Also see above. The FOEN is the responsible authority for the Stockholm Convention and we also do the transposition into the national legislation on chemicals. But as I said, for the execution the cantons are responsible....

Other pollutants are also noticeable in the sample:
The content of formaldehyde is above the EcoAid benchmark.
The alkylphenol ethoxylate NPEO was detected at concentrations exceeding the EcoAid benchmark as well as the industrial standards of SG Leather.
The sample is the only one in which an organotin compound, monobutyltin, was detectable. The concentration was above the EcoAid benchmark and above the limit of the EU Toy Directive and the benchmark of the industrial standard SG Leather.
Polycyclic aromatic hydrocarbons PAHs were found, including acting carcinogens, in concentrations above the EcoAid benchmark. Were the PAH limit for consumer products of 0.2 mg/kg, suggested by the German Federal Institute for Risk Assessment BfR, raised to being a statutory limit – a long overdue step – the limit would be exceeded by this sample 5 fold which would therefore result in a regulatory complaint.
Finally, the sample was also contaminated with soluble lead compounds, so that the EcoAid benchmark was exceeded and the industrial benchmark of the SG Leather standard was reached.
The level of formaldehyde in this fur was only just under the EcoAid benchmark.

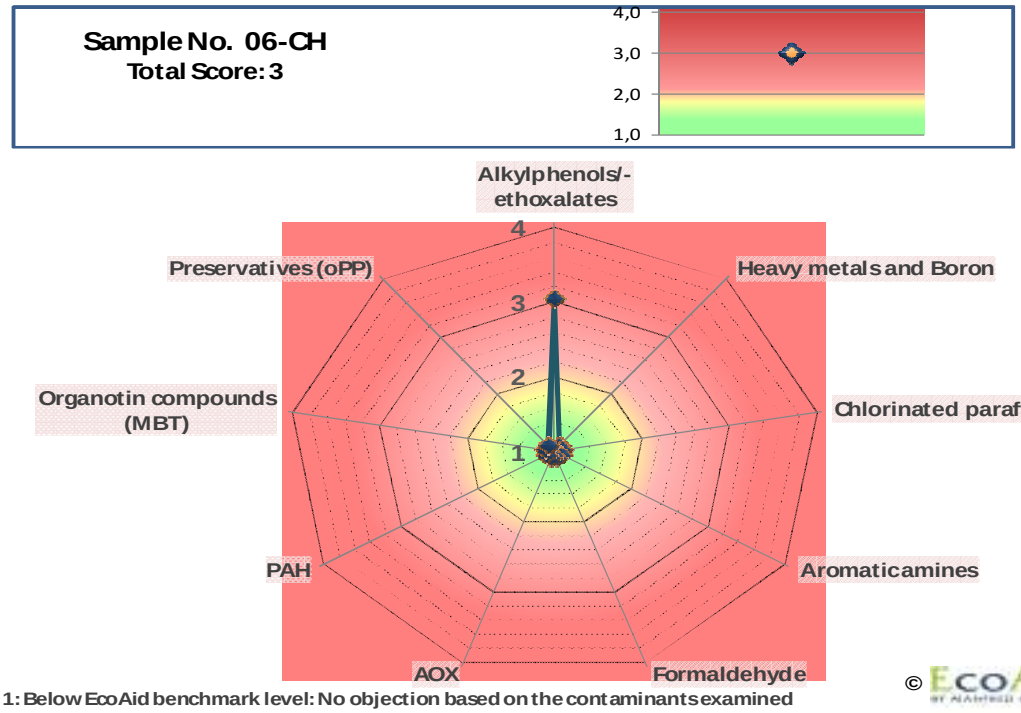
Overall, the sample is characterised by considerable contamination with a total of five hazardous substance groups - DDT, alkylphenol ethoxylates, organotin compounds, lead and PAHs. It is one of the most critically hazardous fur samples in this test. The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. EcoAid recommends bringing the sale of the product and the obvious use of DDT to the attention of the responsible regulatory authority. It should then be investigated as to how the determined DDT contamination occurred. A recall of products made from this source is advisable. Likewise, the relevant premises should be investigated and closed as a precaution.

9.6.6 06-CH (Hood/Racoon Dog, WOOLRICH at Sophys Bale): Children's clothing, Not suitable for use, Industrial standards (APEO) exceeded / Children's clothes

H4674 FT – 20

Sample no.	06-CH	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	180	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8		0.1	1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1		n.n.	1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	26	1
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

The affected product is children's clothing. Due to children's higher sensitivity towards harmful substances the health risk is especially increased.

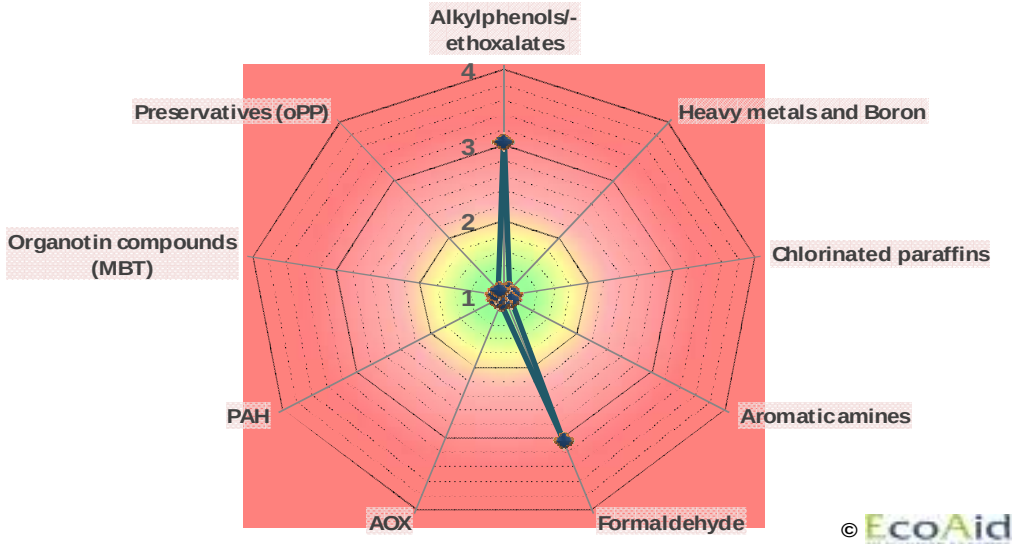
This sample is clearly contaminated with NPEO. The EcoAid benchmark and the benchmark of the industrial standards of SG Leather were exceeded. Overall, due to the described contamination, the product is especially not recommended for children.

9.6.7 07-CH (Hood/Fox, POIVRE BLANC at Och Sport, Zürich): Children's clothing, Product warning, Industrial standards (APEO, Formaldehyde) exceeded / Children's clothes

H4674 FT – 21

Sample no.	07-CH	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	606	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8		< 0.1	1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		16	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1		n.n.	1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	250	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

The product is a children's coat.
The level of formaldehyde is greatly elevated and exceeds both the EcoAid benchmark and the EU Toy Directive as well as the less precautionary benchmark of the industrial standard "SG Leather". The substance is suspected of being carcinogenic.
The contamination with the alkylphenol ethoxylate NPOE is also too high and exceeds the same reference values like the aforementioned formaldehyde.

The affected product is children's clothing. Due to children's higher sensitivity towards harmful substances the health risk is especially increased.
This children's product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. Especially for children, the product represents a health hazard. A product recall should take place for children's clothing with this level of formaldehyde contamination.
Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.7 Samples Purchased in the Netherlands

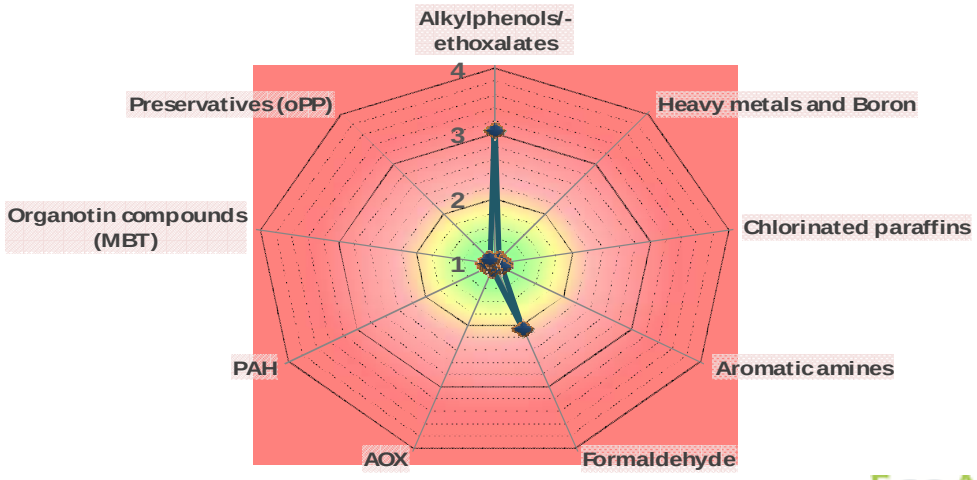
- All investigated samples were contaminated with two to three hazardous substances.
- Of the three samples from the Netherlands, one was conspicuous due to the high boron content and another due to its very high content of the allergenic and carcinogenic chemical, formaldehyde.
- In two of the three samples, not only the EcoAid benchmarks were exceeded but also the benchmarks of the less stringent industrial standards, SG Leather.

9.7.1 01-NL (Collar/Racoon Dog, BURBERRY, Amsterdam): Not recommended, Industrial standards (APEO) and EcoAid standards (Formaldehyde) exceeded

H4674 FT – 22

Sample no.	01-NL	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	151	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	47	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

The formaldehyde content of this sample is above the EcoAid benchmark. The substance is allergenic and carcinogenic.
All three tested alkylphenols and ethoxylates were contained in the sample. Of which the content of NPEO exceeded the EcoAid benchmark as well as the less stringent benchmark of the industrial standards "SG Leather".

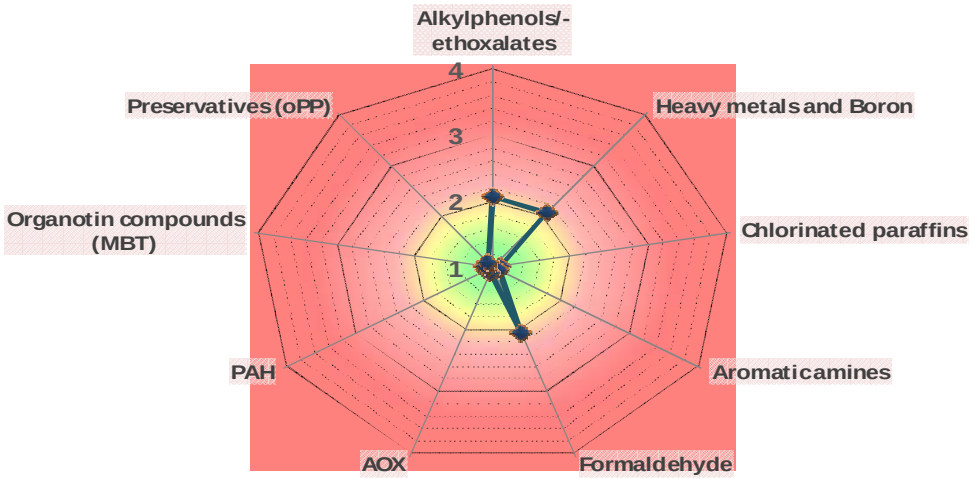
Overall, the contamination of the sample is only relatively low in comparison to the other furs tested here. However, due to the described contamination, the product is not recommended.

9.7.2 02-NL (Scarf/Fox, GUCCI, Amsterdam): Not recommended, EcoAid standards (APEO, Formaldehyde, Boron) exceeded

H4674 FT – 23

Sample no.	02-NL	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	70	2
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8		< 0.1	1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10			60	2
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	54	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	2

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



© EcoAid

1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

In this sample, slightly soluble boron compounds were detected. The contamination came from boric acid or borax, which is occasionally used in chromium tanning. Boric acid, which arises from borax, is listed in the EU REACH Regulation as a substance of concern, which affects fertility, is carcinogenic and can harm the foetus in the womb. The EcoAid benchmark was significantly exceeded.
This is also true for the measured levels in the sample of allergenic and carcinogenic formaldehyde and alkylphenol ethoxylates.

Overall, due to the described contamination, the product is not recommended.

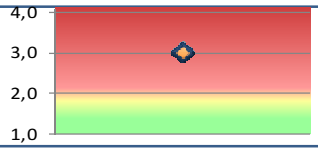
9.7.3 03-NL (Hood/Racoon Dog, NICKELSON at Leder Paleis, Amsterdam): Children's clothing, Product warning - Industrial standards (APEO, Formaldehyde) exceeded / Children's Clothes

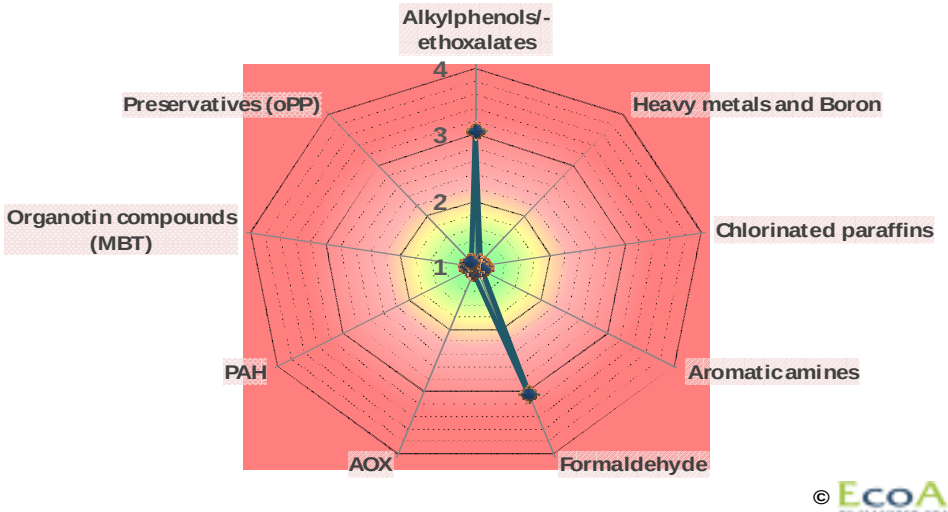
H4821 FT – 1

Sample no.	03-NL	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	621	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		7	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	220	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton

Sample No. 03-NL
Total Score: 3





© EcoAid

1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG lLather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

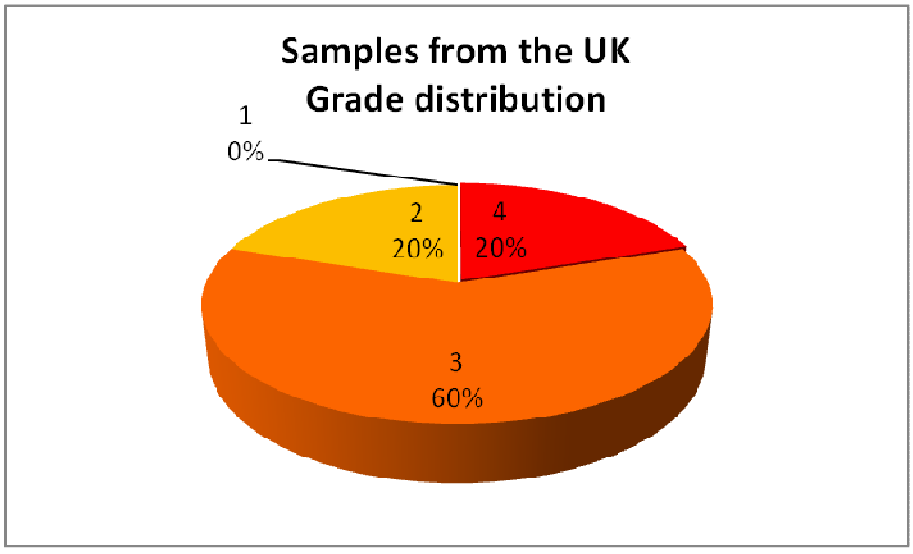
The product concerned is children's clothing.
This sample is heavily contaminated with formaldehyde. This substance is highly allergenic and is suspected of being carcinogenic. Both the EcoAid benchmark and the limit of the EU Toy Directive were exceeded as was the benchmark of the industrial standards of SG Leather.
The contamination with the alkylphenol ethoxylate NPEO was also too high and also exceeded the EcoAid and industrial benchmarks.

The affected product is children's clothing. Due to children's higher sensitivity towards harmful substances the health risk is especially increased.
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. Especially for children, the product represents a health hazard. A product recall should take place for children's clothing with this level of formaldehyde contamination.
Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.8 Samples Purchased in Great Britain

- All fur samples sold in Great Britain were found to be heavily or very heavily contaminated with two to four hazardous substance groups.
- In four of the five samples tested, not only the cautionary EcoAid benchmarks were exceeded but also the industry's own voluntary SG-Leather standards. The industry seems therefore to ignore the voluntary industrial standards.
- In one sample, because there is evidence of carcinogenic diphenylamines – the highest in this test program overall - it is suspected that forbidden dyes were used.
- The content of alkyl phenol ethoxylates is partly above one gram per kilogramme of fur and thereby above the EU limit for chemicals and chemical mixtures. Therefore there is the suspicion of unlawful use of these chemicals if the processing occurred in the EU or a country with similar standards.
- The samples from Great Britain are especially conspicuous through the regularly detectable content of questionable preservatives, like chlorophenols. During this test, these preservative were otherwise only found in samples from Bulgaria.

EcoAid advises against the sale and use of four of the five fur samples tested for reasons of precautionary health protection. In the named cases, the intervention of regulatory authorities is required due to the strong suspicion of a violation of statutory obligations.

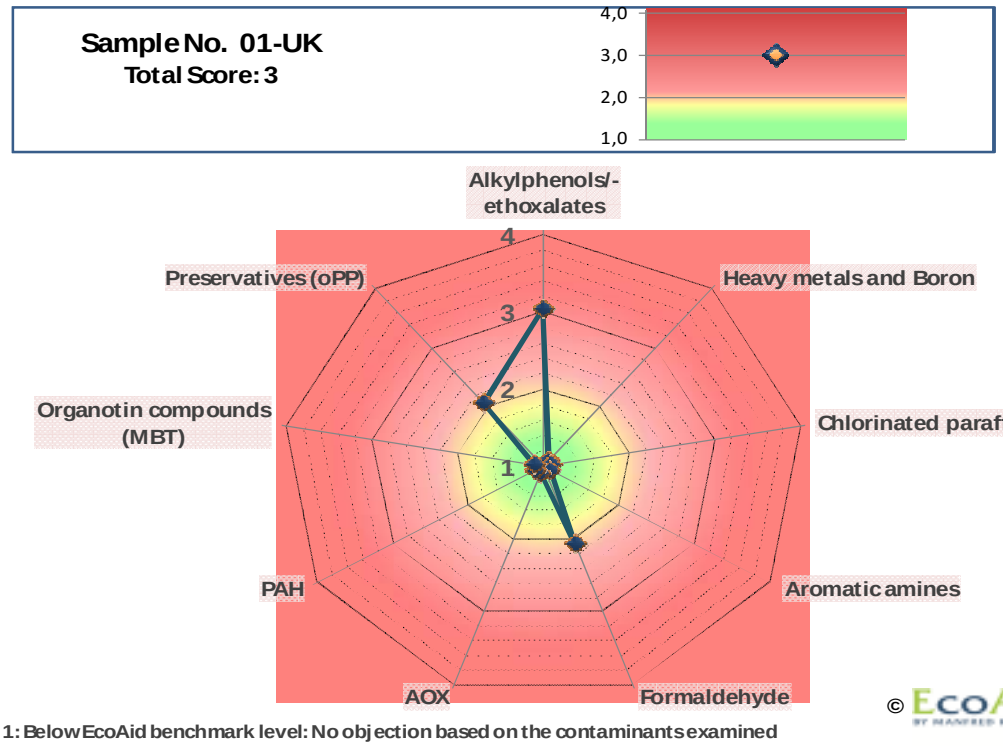


9.8.1 01-UK (Hat/Mink, ANDRÉ at Harrods; London): Not suitable for use, Industrial standards (APEO) and EcoAid standards (Preservatives, Formaldehyde) exceeded

H4821 FT – 2

Sample no.	01-UK	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	361	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100		52	2
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	51	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



The sample exhibited the second highest contamination with the preservative ortho-phenylphenol (oPP). The EcoAid benchmark was exceeded. The limit of the EU Toy Directive was exceeded 5 fold, the limit of the international GOTS standard for organically manufactured textiles was even exceeded 50 fold. As the toxic preservative CMP was also detected, it must be assumed that the fur underwent a specific chemical preservation process.
The sample also contains the allergenic and carcinogenic substance, formaldehyde, in concentrations that exceed the benchmark values of EcoAid and the EU Toy Directive.
The content of alkylphenol ethylates is also above the EcoAid benchmark, the content of NPEOs is even above the benchmark of the leather industry according to the SG Leather standard.

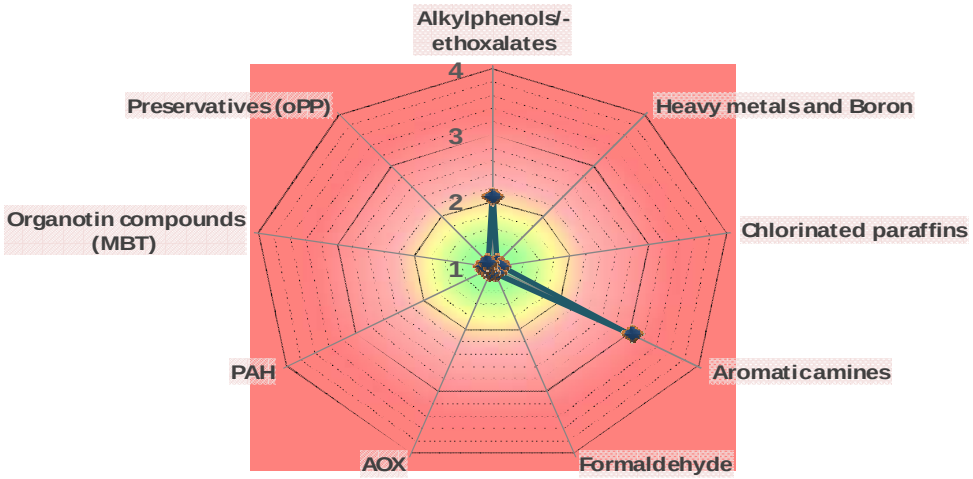
Overall, due to the described contamination, the product is not recommended.

9.8.2 02-UK (Collar/Fox, BURBERRY, London): Not suitable for use, Industrial standards (Aromatic amines) and EcoAid standards (APEO) exceeded

H4821 FT – 3

Sample no.	02-UK	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	64	2
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		15	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30		870	3
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100		1.2	1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	3	1
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

In the current test, this sample had the highest measured concentration of the highly toxic and carcinogenic phenylenediamine (PDA) isomers which belong to the aromatic amines. It is suspected that illegal dyes were used in the black colouring of the fur. The measured PDA value well exceeded the EcoAid benchmark as well as the benchmark of the industrial standard SG Leather.
The measured concentration of alkylphenol ethoxylates is above the EcoAid benchmark.
The chromium content in the total extraction is so high that it indicates that the chromium tanning process was used. As the value of dissolvable chromium in the eluate test is under the EcoAid benchmark, there is no devaluation for this parameter.

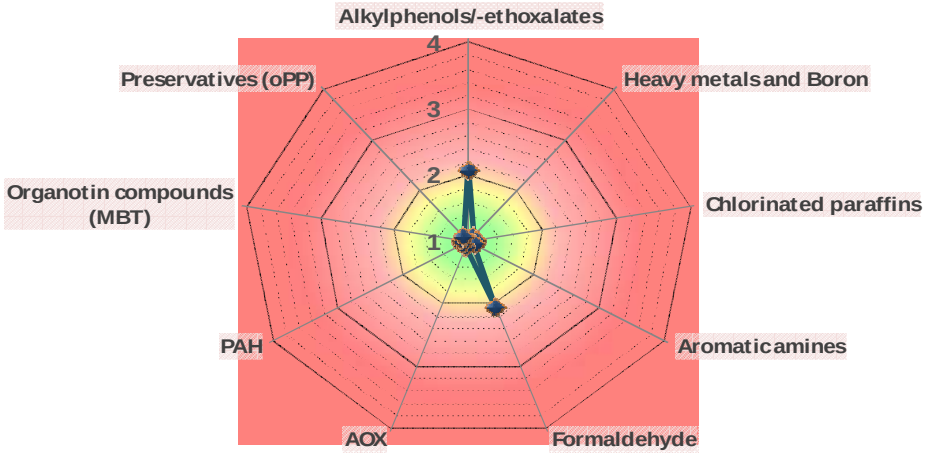
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. EcoAid recommends bringing the sale of the product to the attention of the responsible authorities, as there is the suspicion that forbidden harmful dyes were used.

9.8.3 03-UK (Collar/Racoon dog, BURBERRY, London): Not recommended, EcoAid standards (APEO, Formaldehyde) exceeded

H4821 FT - 4

Sample no.	03-UK	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	105	2
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100		14	1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	45	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	2

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

The contamination in this sample is relatively low in comparison to the other samples in the test. However, the EcoAid benchmarks for formaldehyde and alkylphenol ethoxylates were exceeded.

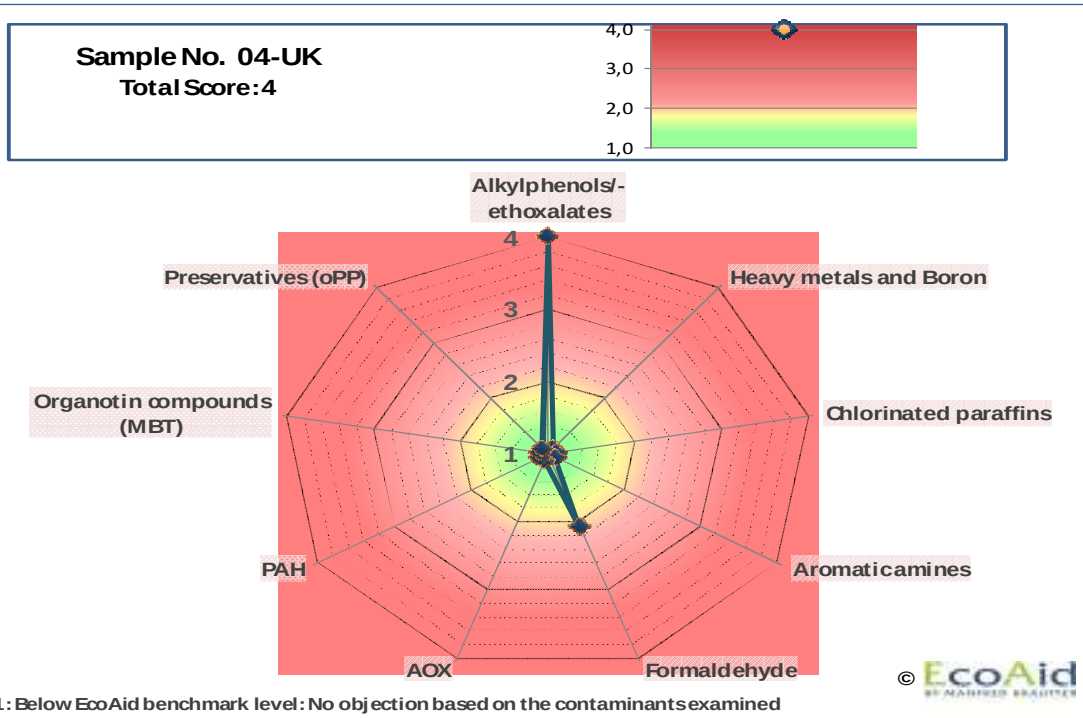
Overall, the sample is moderately contaminated with hazardous substances. However, the product is not recommended for children or sensitive adults.

9.8.4 04-UK (Collar/Racoon Dog, MADELEINE, online): Product warning - Statutory standards (APEO) and EcoAid standards (Formaldehyde) exceeded

H4821 FT - 5

Sample no.	04-UK	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	2143	4
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		11	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100		n.n.	1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	62	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	4

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffinsonly
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample is very highly contaminated with nonylphenol ethoxylates (NPEO) and nonylphenol. It even exhibited the highest measured value in this test for nonylphenol and the second highest value for NPEO. The NPEO content is so high with 2.1 grams per kilogramme of fur that the sale of the product in Europe would not be allowed if it were dealing with a chemical or a chemical mixture. For items such as furs there is a regulatory gap. If the goods were processed in Europe, there would be the strong suspicion of a violation of EU chemicals legislation. Therefore, EcoAid recommends filing a complaint with the responsible regulatory authorities.

The amount of formaldehyde, an allergen that is also a carcinogen, is above the EcoAid benchmark.
A low concentration of the preservative CMP was contained in the sample.
The chromium content measured in the total extraction is so high that it indicates that the chromium tanning process was used. As the value of dissolvable chromium in the eluate test is under the EcoAid benchmark, there is no devaluation for this parameter.

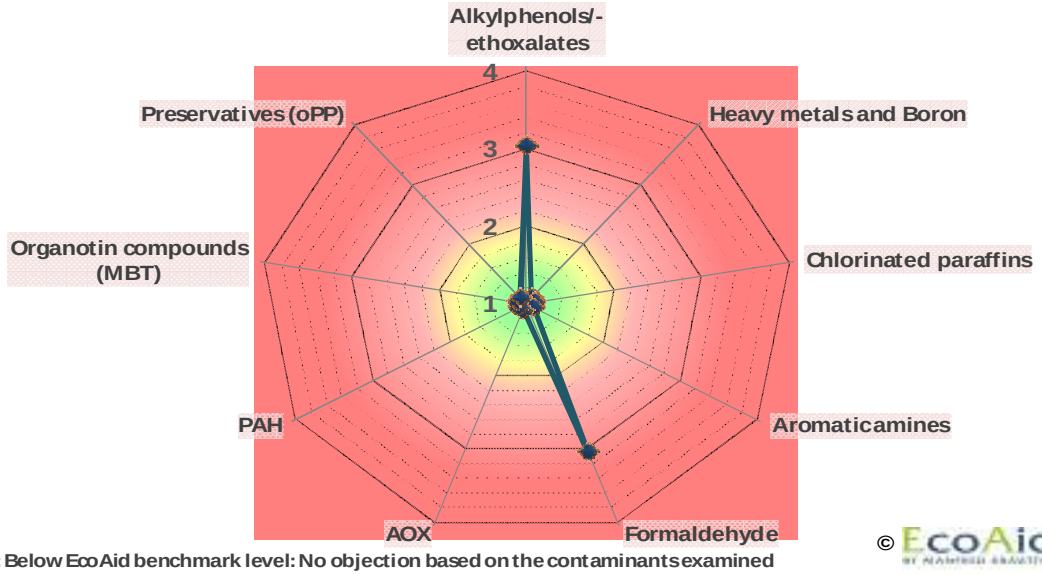
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals. EcoAid recommends bringing the sale of the product to the attention of the responsible authorities. This should include checking whether the production included the prohibited application of alkylphenol ethoxylates.

9.8.5 05-UK (Hood/Racoon dog, WOOLRICH at Browns, London): Product warning - Industrial standards (APEO, Formaldehyde) exceeded

H4821 FT – 6

Sample no.	05-UK	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	138.9	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100		n.n.	1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	160	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample was so heavily contaminated with formaldehyde, that the EcoAid benchmark and even the less stringent benchmark of the industrial standard SG Leather were exceeded.
The same standards were also exceeded by the alkylphenol ethoxylate NPEO exceeded.
In addition, the preservative 4-chloro-3-methylphenol (CMP) was detected in the sample.

The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals.

Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

9.9 Samples Purchased in Bulgaria

- All fur samples sold in Bulgaria were found to be heavily contaminated with 3 or 4 hazardous substance groups.
- In all samples tested, not only the cautionary EcoAid benchmarks were exceeded but also the industry's own voluntary SG-Leather standards. The industry seems therefore to ignore the voluntary industrial standards.
- The fur samples from Bulgaria fail the test due to the occasionally high content of questionable preservatives, including the carcinogen ortho-phenylphenol and the PAH naphthalene.
- All samples exhibited AOX values, which is suggestive of further contamination with organochlorine compounds.
- One sample exhibited a very elevated level of soluble chromium (the highest value in this test program), which is a reference to a defective tanning process.
- As the applicable Bulgarian national limit for formaldehyde of 30mg/kg was exceeded in three of the four samples, the sale of these products was not legal and should be reported to the responsible regulatory authority.

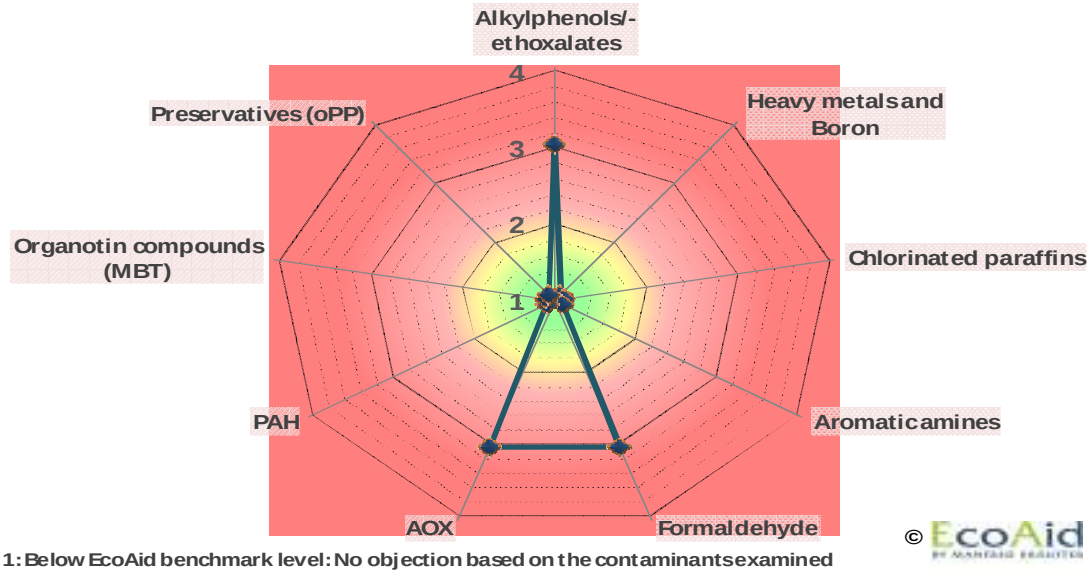
None of the four samples is recommended. On the contrary, all samples are so heavily contaminated that no sale or use should be permitted.

9.9.1 01-BG (Collar/Fox, MODESTIA at Versis, Sofia): Product warning - Industrial standards (APEO, AOX, Formaldehyde) exceeded

H4821 FT – 7

Sample no.	01-BG	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	155	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		38	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100		1.5	1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	130	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5		20	3
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		0.7	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1		0.09	1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample contains formaldehyde in a concentration that is four times above the limit of the EU Toy Directive and the EcoAid benchmark. Even the guidelines of the industrial standard SG Leather were exceeded. Formaldehyde is carcinogenic and highly allergenic. As the applicable Bulgarian national limit for formaldehyde of 30mg/kg was exceeded, the sale of this product was not legal and should be reported to the responsible regulatory authority.

The content of adsorbable halogenated hydrocarbons (AOX) is also above the EcoAid and industrial benchmarks.
The alkylphenol ethoxylates, especially NPEO exceed both the EcoAid benchmark and the benchmark of the industrial standard SG Leather.
The preservative ortho-phenylphenol, soluble chromium and PAH were detected in less relevant concentrations.

The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals.
As the applicable Bulgarian national limit for formaldehyde of 30mg/kg was exceeded, the sale of this product was not legal and should be reported to the responsible regulatory authority. Fur products like this one, with formaldehyde contamination in excess of 100 mg/kg, should be reported to the authorities for consumer protection in the relevant EU member countries as well as to the EU Rapid Warning System RAPEX through the EU Commissioner for Health and Consumer Protection.

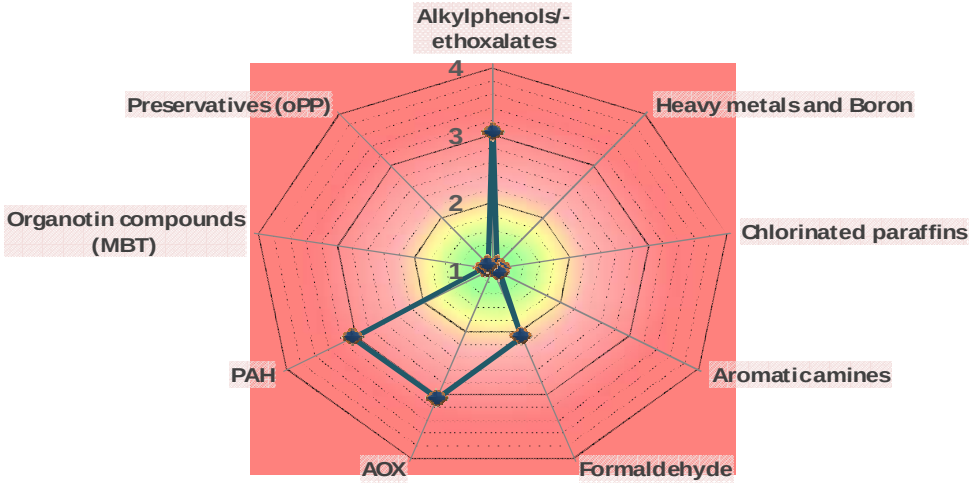
9.9.2 02-BG (Cap/Mink, ALFA FURS, Sofia): Product warning - Industrial standards (APEO, AOX, Formaldehyde) exceeded

H4821 FT – 8

Sample no.	02-BG	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	186	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8		< 0.1	1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02		< 0.02	1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100		3	1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	37	2
8	AOX (adsorbable organic halogens)	<5	>=5	>=5		60	3
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		6.2	2
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1		5.7	3
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton

Sample No. 02-BG
Total Score: 3



© EcoAid

1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample had the second highest measured AOX content in this test which exceeded both the EcoAid as well as the industrial benchmark (SG-Leather).
The content of PAHs is also of concern, especially the PAH naphthalene which used to be used as a moth-proofing agent. The EcoAid benchmark and the industrial cumulative benchmark of SG-Leather were exceeded.
The measured value for alkylphenol ethoxylates, especially NPEO is well above the EcoAid limit and the limit from the industrial standards SG-Leather.
The measured value of the allergenic and carcinogenic formaldehyde was above the EcoAid benchmark. As the applicable Bulgarian national limit for formaldehyde of 30mg/kg was exceeded, the sale of this product was not legal and should be reported to the responsible regulatory authority.
Furthermore, preservatives were detected, including the carcinogenic CMP.

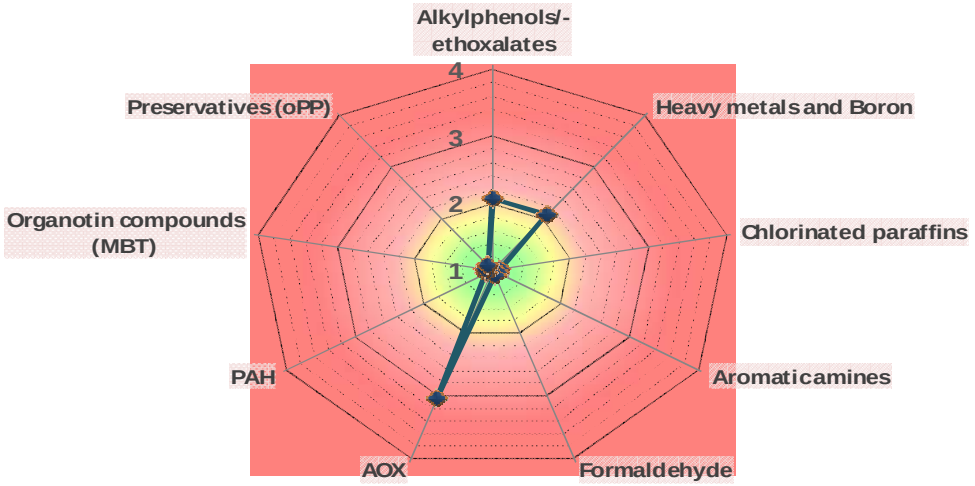
Overall, the contamination of the sample was considerable, both in terms of the variety of contaminants as well as the amount of contamination. The EcoAid benchmarks were exceeded in four parameters; the industrial standards of SG-Leather were exceeded in 3 parameters. The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals.
As the applicable Bulgarian national limit for formaldehyde of 30mg/kg was exceeded, the sale of this product was not legal and should be reported to the responsible regulatory authority.

9.9.3 03-BG (Cap/Seal, BILIS, Sofia): Product warning, Industrial standards (AOX) and EcoAid standards (APEO, Heavy metals) exceeded

H4821 FT – 9

Sample no.	03-BG	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	94.6	2
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		110	2
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100		3.6	1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	7	1
8	AOX (adsorbable organic halogens)	<5	>=5	>=5		200	3
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		0.83	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample had the highest measured contamination of absorbable organic halogens (AOX) and soluble chromium (eluate test) seen in this study. The content of absorbable organic halogens was 40 times the benchmark values of the industrial standard SG-Leather, the EcoAid benchmark, the benchmark of the international GOTS textiles standards and the German RAL for Textiles (Blue Angel). This value is of concern, as many organic halogens are highly toxic, persistent and enrich themselves in the body.
The chromium value indicates that chromium tanning was used. In the eluate test, soluble chromium was detected in concentrations above the EcoAid benchmark. This heavy metal can cause eczema, allergies and mucous membrane irritation.
Finally, the EcoAid benchmark was also exceeded by the alkylphenol ethoxylates.

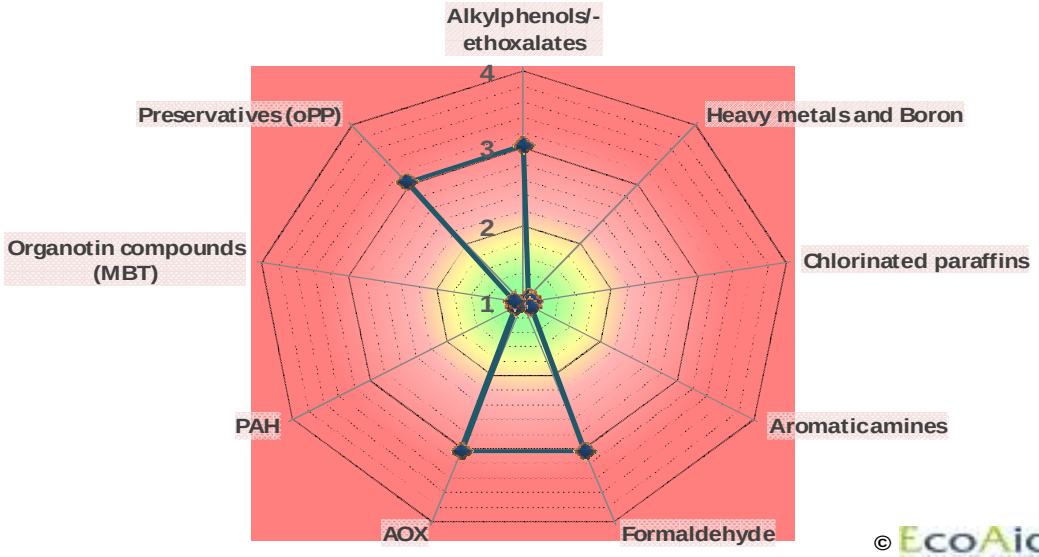
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals.

9.9.4 04-BG (Cap/Fox, ALFA FURS, Sofia): Product warning - Industrial standards (APEO, Preservatives, Formaldehyde, AOX) exceeded

H4821 FT – 10

Sample no.	04-BG	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	440	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200			1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100		150	3
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	99	3
8	AOX (adsorbable organic halogens)	<5	>=5	>=5		9	3
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10		0.46	1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

This sample was heavily contaminated with hazardous substances.

The carcinogenic preservative ortho-phenylphenol was detected with the highest value in this test and thereby exceeded the EcoAid benchmark as well as the industrial standards benchmark.
The content of allergenic and carcinogenic formaldehyde is also well above the EcoAid benchmark and the more generous benchmark of the industrial standard SG Leather. As the applicable Bulgarian national limit for formaldehyde of 30mg/kg was exceeded, the sale of this product was not legal and should be reported to the responsible regulatory authority.

The AOX content also exceeds the corresponding benchmarks of both of these standards.
The measured values of two alkylphenol ethoxylates, for NPEO and for OPEO are above the EcoAid standards as well as above the SG-Leather industrial standards.
Both substances are classified on the EU list of endrocrine disruptors with the highest category, Category 1, as hormonally active chemicals.

Overall, the contamination of the sample was considerable, both in terms of the variety of contaminants as well as the amount of contamination. The EcoAid benchmarks, as well as those of SG-Leather, were exceeded in four parameters.
The product should neither be sold to nor used by consumers due to the excessive contamination with hazardous chemicals and environmentally damaging chemicals.
As the applicable Bulgarian national limit for formaldehyde of 30mg/kg was exceeded, the sale of this product was not legal and should be reported to the responsible regulatory authority.

9.10 Samples Purchased in Rumania

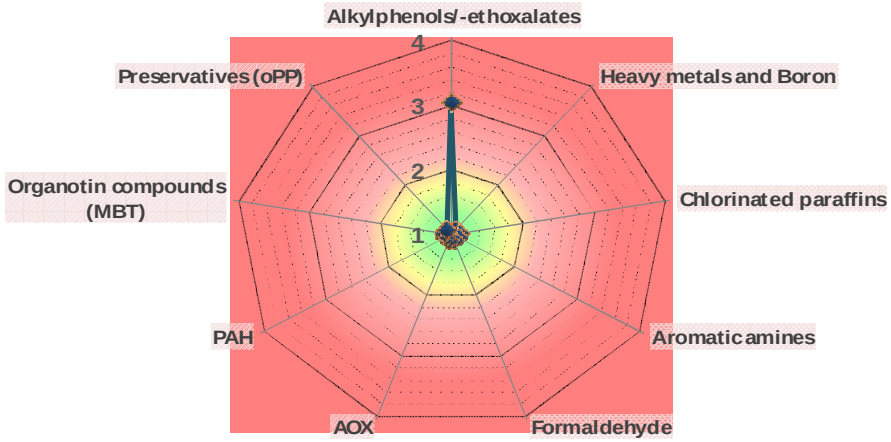
Both of the samples from Rumania have relatively low levels of contamination in comparison to the other samples in this study program. However, because of the alkylphenol ethoxylate levels, they are not recommended.

9.10.1 01-RO (Collar/Fox, CHRONOS ART, at Posh Market, Bukarest): Not recommended – Industrial standards (APEO) exceeded

H4821 FT – 11

Sample no.	01-RO	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	189	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		< 1	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30			1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	17	1
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



© EcoAid

1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

The sample exhibits a measured value for one of the chemical groups, the alkylphenol ethoxylates, which is above the EcoAid benchmark as well as above the industrial standards of SG-Leather.
The total chromium content measured in the total extraction is so high that it indicates that the chromium tanning process was used. However, the value of dissolvable chromium in the eluate test is so low that the EcoAid benchmark was not exceeded.

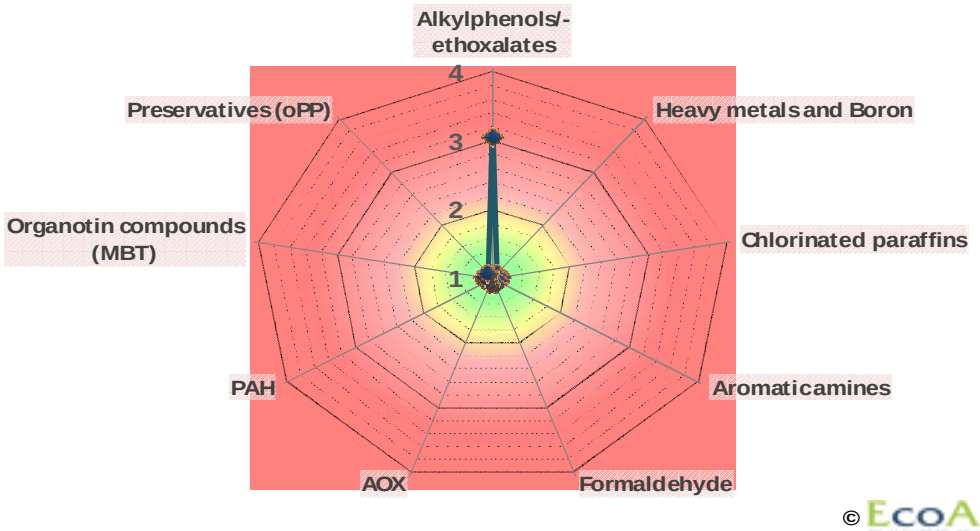
Overall, the level of contamination in the sample is relatively low in comparison to the other furs tested here. Wearing this fur product though is not recommended for children or sensitive adults.

9.10.2 02-RO (Vest/Nutria, CHRONOS ART at Veronesse, Bukarest): Not recommended - Industrial standards (APEO) exceeded

H4821 FT – 12

Sample no.	02-RO	Scores related to mg contaminant / kg fur product					
	Contaminants	1	2 - EcoAid	3 - Industry / SG Leather	4 - Legal limit	Concentration measured in mg/kg	Score per contaminant
1	Alkylphenols/-ethoxalates (Total NP, NPEO, OPEO)	<50	>=50	>=100	>=1000	175.7	3
2	Heavy metal - lead (eluate)	< 0.4	>=0.4	>=0.8			1
2	Heavy metal - chromium (eluate)	<100	>=100	>=200		48	1
2	Heavy metal - mercury (eluate)	< 0.02	>=0.02	>=0.02			1
2	Boron (eluate)	< 10	>=10				1
3	Chlorinated paraffins	< 100	>=100	>=1000*			1
4	Aromatic amines: Phenylenediamine	<20	>=20	>=30		n.n.	1
5	Preservatives: o-Phenylphenol (oPP)	< 50	>=50	>=100			1
6	Organotin compounds (MBT)	< 0.1	>=0.1	>=1			1
7	Formaldehyde	< 30	>= 30	>=75	>=500**	21	1
8	AOX (adsorbable organic halogens)	<5	>=5	>=5			1
9	Total all PAHs (polycyclic aromatic hydrocarbons)	<5	>=5	>=10			1
9	Carcinogenic PAHs	<0.2	>=0.2***	>=1			1
						Total score (worst individual score of a contaminant)	3

Scoring levels
1: Below EcoAid benchmark level
2: At or above EcoAid benchmark level
3: At or above industrial standard (e.g. SG Leather)
4: At or above legal limit or standard
* for short chained chlorinated paraffins only
**: BfR-recommendation for labelling
***: BfR-recommendaton



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

Similar to the first sample from Rumania, this sample exhibits a measured value for one of the chemical groups, the alkylphenol ethoxylates, which is above the EcoAid benchmark as well as above the industrial standards of SG-Leather.
The total chromium content measured in the total extraction is so high that it indicates that the chromium tanning process was used. However, the value of dissolvable chromium in the eluate test is so low that the EcoAid benchmark was not exceeded.

Overall, the level of contamination in the sample is relatively low in comparison to the other furs tested here. However, wearing this fur product is not recommended for children or sensitive adults.

9.11 Fur Products from Burburry

Five samples in the test program, which were bought in Austria, Germany, the Netherlands and Great Britain, came from the English brand manufacturer Burburry.

Table 9 Fur products from Burberry

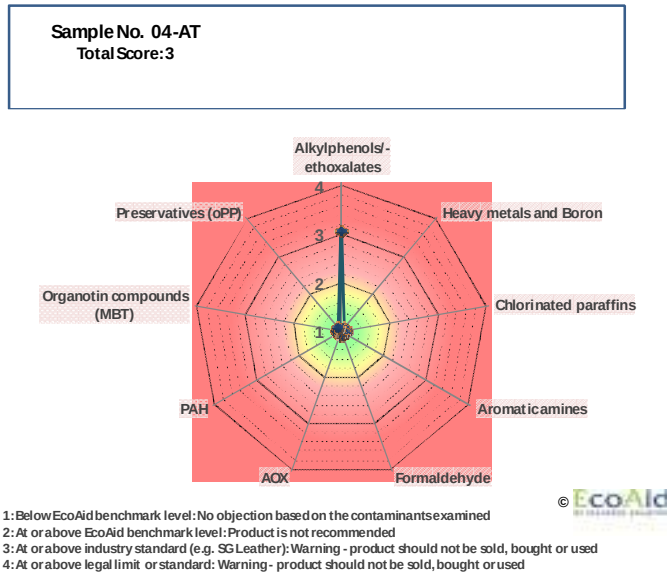
04-AT H4674 FT – 11	Raccoon dog	Blisland QF, XL Khaki BURBERRY	BURBERRY Designer Outlet Parndorf	Austria	Turkey	Finland
01-DE H4674 FT-1	Fox	Collar LDS Fur collar BURBERRY	BURBERRY	Germany	Turkey	Finland
01-NL H4674 FT – 22	Raccoon dog (same article as in sample 33)	Collar LDS Fur Collar 5045318448422 BURBERRY	BURBERRY Netherlands	The Netherlands	Turkey	Finland
02-UK H4821 FT – 3	Arctic fox	Collar LDS Fur Collar 5045318445964 BURBERRY	BURBERRY	Great Britain	Turkey	Turkey
03-UK H4821 FT - 4	Racoon Dog (same article as in sample 26)	Collar LDS Fur Collar 5045318448422 BURBERRY	BURBERRY	Great Britain	Turkey	Finland

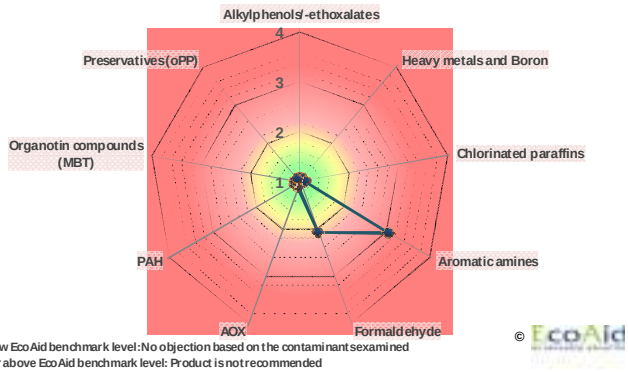
The contamination of these products was in the average range overall. However, not only the cautionary EcoAid benchmarks but also the maximum levels of the industrial standards were exceeded in all samples – not a good result for an internationally famous brand. The

discovered contamination with alkylphenol ethoxylates, formaldehyde and aromatic amines is so high that the products are not recommended in terms of the contamination. The sample from Great Britain even exhibited an extremely worrying contamination with aromatic amines.

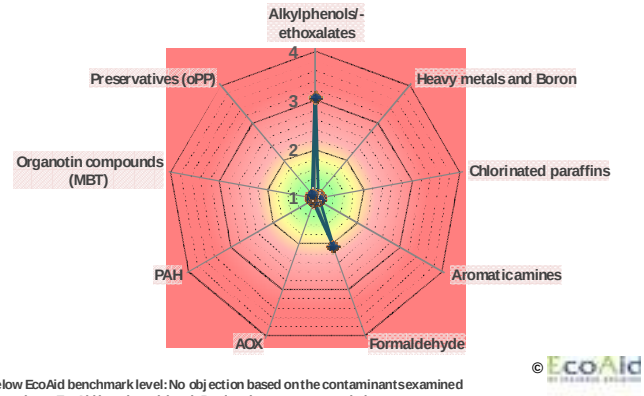
The five samples were evaluated as follows:

1. 04- AT: Not recommended, Industrial standards (APEO) exceeded
2. 01-DE: Not suitable for use, Industrial standards exceeded (Aromatic amines)
3. 01-NL: Not recommended, Industrial standards (APEO) and EcoAid standards (Formaldehyde) exceeded
4. 02-UK: Not suitable for use, Industrial standards (Aromatic amines) and EcoAid standards (APEO) exceeded
5. 03-UK: Overall, the sample is moderately contaminated with hazardous substances. However, the product is not recommended for children or sensitive adults.

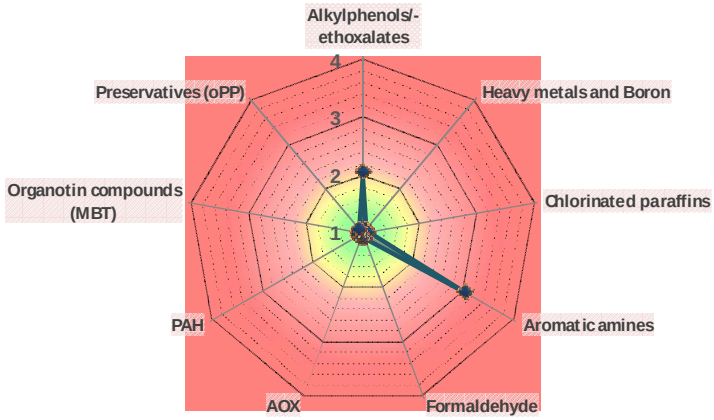




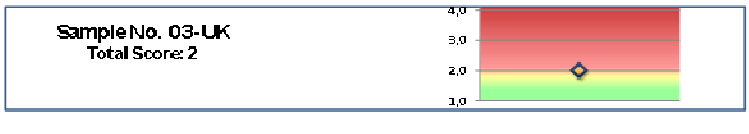
1: Below EcoAid benchmark level: No objection based on the contaminant sexamined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

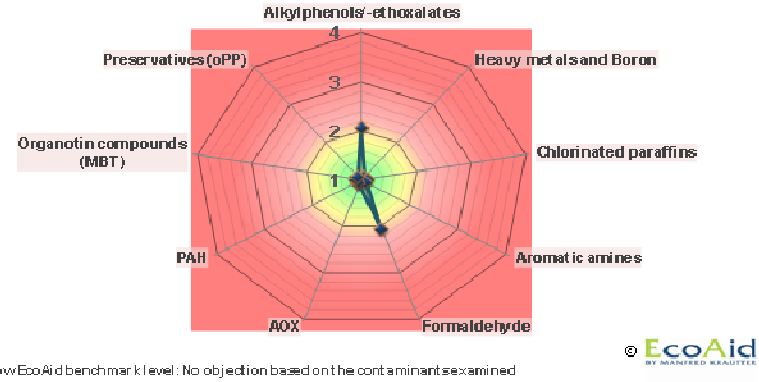


1: Below EcoAid benchmark level: No objection based on the contaminant sexamined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used



1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used





1: Below EcoAid benchmark level: No objection based on the contaminants examined
2: At or above EcoAid benchmark level: Product is not recommended
3: At or above industry standard (e.g. SG Leather): Warning - product should not be sold, bought or used
4: At or above legal limit or standard: Warning - product should not be sold, bought or used

9.12 Suspected Cases of Violations of EU Law or National Law

In twelve cases, the contamination found in the fur products was so high, that there was probably a violation of legal requirements. In these suspected cases, EcoAid recommends reporting to the responsible regulatory authorities as well as to the RAPEX system for product warnings in the EU. The authorities should be invited to inspect the currently sold products.

	Sample No.	Basis for a complaint	Suspected violation of	Manufacturer & Retailer of the Product
1	01DE	Aromatic amines: Suspected use of a banned or hazardous dye	EU Chemical Regulation REACH, Commodities Regulation	
2	07DE	APEO	EU Chemical Regulation REACH, especially if the commodity was processed in the EU area	
3	01AT	Aromatic amines: Suspected use of a banned or hazardous dye	EU Chemical Regulation REACH, Commodities Regulation	Balser. Kleider Bauer, Vienna
4	06AT	APEO, Formaldehyde	EU Chemical Regulation REACH, especially if the commodity was processed in the EU area. Formaldehyde. Reporting occasion for RAPEX	Diadora. Dream Fashion, Wals-Siezenheim
5	02CH	APEO	Swiss and EU Chemical Regulation REACH, especially if the commodity was processed in the EU area	Modissa. Modissa, Zurich
6	03CH			Giorgio Passigatti bei Dublanc. Dublanc, Zurich
7	05CH	DDT	Violation of a global production and use prohibition of DDT: Stockholm Convention of the United Nations, Swiss Chemical Regulation	Kohler. Kohler, Basel
8	02UK	Aromatic amines: Suspected use of a banned or hazardous dye	EU Chemical Regulation REACH, Commodities Regulation	Burberry Burberry, London
9	04UK	APEO	EU Chemical Regulation REACH, especially if the commodity was processed in the EU area	Madeleine. Madeleine Fashion, Nottingham

10	01BG	Formaldehyde	Exceeding the national formaldehyde limits for consumer goods	Modestia. Versis, Sofia
11	02BG			-. Alfa Furs, Sofia
12	04BG			-. Bilis, Sofia

10 Annex

[i] REACH: Federal Environment Agency advises on the regulation of octylphenol
31.08.2011 Source: Federal Environmental Agency
As the first EU member state, Germany has identified one octylphenol as a hormonally acting substance of particular concern and has filed its assessment formally at the European Chemicals Agency (ECHA) is filed. Scientific studies show that octylphenol affected the hormone system in fish, leading to damage in development and reproduction. Even minimal concentrations of a few millionths of a gram are enough. If the other Member States accept the German proposal to apply octylphenol as "particularly worrying stuff" in December then it will be included in the REACH Candidate List. This is the first step towards an EU-wide authorization or restriction. Octylphenol is used, for example, in the manufacture of paints, coatings, adhesives and tires. The FEA generally believes it is necessary to more severely regulate substances with hormonal effects. The EU chemicals regulation REACH makes this possible: In some cases, substances with hormonal effects may be identified as particularly worrying. So they are evaluated just like substances that provoke cancer or reproductive harm. But so far, this REACH instrument has not been used. "We should not only discuss the evaluation of substances with hormonal effects, but must also act", said FEA President Jochen Flasbarth. The FEA has taken the first step here with the identification of octylphenol.

Octylphenol (chemically correct: 4-tert-octylphenol) is one of the alkylphenols. The best known substances from this chemical group are the nonylphenol ethoxylates which also have hormonal effects and which were detected in textiles in a recent Greenpeace study. Nonylphenol and its ethoxylates are banned in the European Union in a number of uses. However octylphenol has not been. In addition to the above uses, a variation of the chemical (octylphenol ethoxylate), is also used in natural gas production for hydraulic fracturing where it is used together with water and pressed under high pressure into rock to release natural gas.

For 45 days businesses, environmental and consumer organisations, government agencies as well as interested citizens can comment on the FEA proposal publicly. REACH is a process with broad participation opportunities. Following this ECHA Member State Committee will make its decision. If a substance is added to the list of candidates, citizens can ask for free, whether the substance is present in a product.

The FEA proposal for 4-tert-octylphenol can be commented on in English at
http://echa.europa.eu/consultations/authorisation/svhc/svhc_cons_en.asp

For more information on the obligation to provide information and to request samples of very high concern substances in products, can be found at www.reach-info.de.

http://www.umweltbundesamt.de/

[ii] Preliminary Investigation

Statement to the laboratory for sample preparation of investigations:

1. The fur samples should
    a. be freed of any possible non-fur parts (e.g. textile parts, edges, labels, lining), so that only the fur part is investigated
    b. be combined into composite samples as described.
    c. be described as mixed samples on the listed substances and substance groups being investigated.
2. Retained samples

a. Unused samples are to be saved – also for possible follow up investigations – for at least 6 months
b. On the labels attached to the samples, "Please Keep"

Preliminary Investigation 1						
Substance (group)	Number of samples per mixed sample	22 samples = Mixed sample	Sample size required in grams per mixed sample	Sample size required for a single sample (for the mixed sample)	Mixed sample composed of the following numbers of individual samples	Corresponds to the new mixed sample number (please give to the laboratory)
Dimethylfumerat DMF	3	7	4	1.3333333	01DE, 02DE, 03DE	201
					04DE, 05DE, 06DE,	202
					07DE, 01NL, 02NL	203
					01AT, 02AT, 03AT	204
					04AT, 05AT, 06AT, 07AT 01CH, 02CH, 03CH	205 206
					05CH,06CH, 07CH	207
Naphthalene& 15 further PAHs	4	6	2	0.5	01DE, 02DE, 03DE, 04DE 05DE, 06DE, 07DE 01AT, 02AT, 03AT, 04AT 05AT, 06AT, 07AT, 01CH, 02CH, 03CH, 05CH	211 212 213 214 215
					06CH, 07CH, 01NL, 02NL	216
Alkylphenol ethoxylates and Nonylphenol	4	6	2	0.5	01DE, 02DE, 03DE, 04DE	221
					05DE, 06DE, 07DE	222
					01AT, 02AT, 03AT, 04AT	223
					05AT, 06AT, 07AT,	224
					01CH, 02CH, 03CH, 05CH	225
					06CH, 07CH, 01NL, 02NL	226
Preservative: Phenolic, isothiazolinones	4	6	2	0.5	01DE, 02DE, 03DE, 04DE	231
					05DE, 06DE, 07DE	232
					01AT, 02AT, 03AT, 04AT	233
					05AT, 06AT, 07AT,	234
					01CH, 02CH, 03CH, 05CH	235
					06CH, 07CH, 01NL, 02NL	236
Aromatic	4	2	2	0.5	01DE, 04DE, 05DE,	241

amines from azo dyes (only for coloured products)*					01AT, 01CH, 03CH,	242
Formaldehyde and formaldehyde releasers and glutardialdehyde	4	6	3	0.75	01DE, 02DE, 03DE, 04DE	251
					05DE, 06DE, 07DE	252
					01AT, 02AT, 03AT, 04AT	253
					05AT, 06AT, 07AT,	254
					01CH, 02CH, 03CH, 05CH	255
					06CH, 07CH, 01NL, 02NL	256
Boron, soluble mineral tanning materials (Al, Cr, Ti, Zr) and heavy metals in the total extraction	4	6	3	0.75	01DE, 02DE, 03DE, 04DE	261
					05DE, 06DE, 07DE	262
					01AT, 02AT, 03AT, 04AT	263
					05AT, 06AT, 07AT,	264
					01CH, 02CH, 03CH, 05CH	265
					06CH, 07CH, 01NL, 02NL	266
Organotin compounds incl. TBT	3	7	5	1.6666667	01DE, 02DE, 03DE	271
					04DE, 05DE, 06DE,	272
					07DE, 01NL, 02NL	273
					01AT, 02AT, 03AT	274
					04AT, 05AT, 06AT, 07AT	275
					01CH, 02CH, 03CH	276
Chlorinated paraffins, short-chain. If possible also medium and long-chain	4	6	5	1.25	05CH,06CH, 07CH 01DE, 02DE, 03DE, 04DE	277 281
					05DE, 06DE, 07DE	282
					01AT, 02AT, 03AT, 04AT	283
					05AT, 06AT, 07AT,	284
					01CH, 02CH, 03CH, 05CH	285
					06CH, 07CH, 01NL, 02NL	286
AOX (Estimated sample size)	4	6	5	1.25	01DE, 02DE, 03DE, 04DE	291
					05DE, 06DE, 07DE	292
					01AT, 02AT, 03AT, 04AT	293
					05AT, 06AT, 07AT,	294
					01CH, 02CH, 03CH, 05CH	295
					06CH, 07CH, 01NL, 02NL	296

For dyes: only 2 mixed samples, as only 6 individual samples are presumed dyed	Caution: Do not use sample CH04 for mixed samples (low sample amount)!

Preliminary Investigation 2

Substance (group)	Number of samples per mixed sample	Requested number of mixed samples	Sample size required in grams per mixed sample	Sample size required for a single sample (for the mixed sample)	Mixed sample composed of the following numbers of individual samples	Corresponds to the new mixed sample number (please give to the laboratory)
Dimethylfumerat DMF	3	4	4	1,33333333	01UK, 02UK, 03UK 04UK, 05UK, 03NL	301 302
					01RO, 02RO, 01BG	303
					02BG, 03BG, 04BG	304
Naphthalene& 15 further PAHs	4	3	2	0,5	01UK, 02UK, 03UK, 04UK	311
					05UK, 03NL, 01RO, 02RO	312
					01BG, 02BG, 03BG, 04BG	313
Alkylphenol ethoxylates and Nonylphenol	4	3	2	0,5	01UK, 02UK, 03UK, 04UK	321
					05UK, 03NL, 01RO, 02RO	322
					01BG, 02BG, 03BG, 04BG	323
Preservative: Phenolic, isothiazolinones	4	3	2	0,5	01UK, 02UK, 03UK, 04UK	331
					05UK, 03NL, 01RO, 02RO	332
					01BG, 02BG, 03BG, 04BG	333

Aromatic amines from azo dyes (only for coloured products)*	4	1	2	0,5	01RO, 02RO, 02UK	341
Formaldehyde and formaldehyde releasers and glutardialdehyde	4	3	3	0,75	01UK, 02UK, 03UK, 04UK	351
					05UK, 03NL, 01RO, 02RO	352
					01BG, 02BG, 03BG, 04BG	353
Boron, soluble mineral tanning agents (Al, Cr, Ti, Zr) and heavy metals in the total extraction	4	3	3	0,75	01UK, 02UK, 03UK, 04UK	361
					05UK, 03NL, 01RO, 02RO 01BG, 02BG, 03BG, 04BG	362 363
Organotin compounds incl. TBT	3	2	5	1,66666667	01BG, 01RO, 02RO	362
					02BG, 03BG, 04BG	363
Chlorinated paraffins, short-chain. If possible also medium and long-chain	4	3	5	1,25	01UK, 02UK, 03UK, 04UK	381
					05UK, 03NL, 01RO, 02RO 01BG, 02BG, 03BG, 04BG	382 383
AOX (Estimated sample size)	4	3	5	1,25	01UK, 02UK, 03UK, 04UK	391
					05UK, 03NL, 01RO, 02RO	392
					01BG, 02BG, 03BG, 04BG	393

Preliminary Investigation 3: Emission chamber test.

	Volatile substance			Noticeable odour samples: 05-CH, 01-BG, 04-BG	3 in a mixed sample. 3 day emission chamber test

1 [iii] Annex – Main Investigation

The Bremer Environmental Institute, who was in charge of the testing, were instructed to prepare the samples for analysis as follows:

1. The fur samples should
   a. be freed of any possible non-fur parts (e.g. textile parts, edges, labels, lining), so that only the fur part is investigated
   2. Retained samples
   b. Unused samples are to be saved – also for possible follow up investigations – for at least 6 months
   c. On the labels attached to the samples, "Please Keep"

	Parameter	Hit rate in screening	Relevant findings in the mixed sample Nos.	Selection of individual samples to the main investigation	Number of individual specimens to be examined
~~1~~	~~**DMF**~~	~~0%~~	~~-~~	~~-~~	~~0~~
2	**PAH**	33%	211, 215, 313	01DE, 02DE, 03DE, 04DE. 01CH, 02CH, 03CH, 05CH. 01BG, 02BG, 03BG, 04BG	12
3	**Nonyl- and Octylphenol ethoxylate**	100%	all	all incl. 04CH	35
4	**Preservative**	22%	331, 333	01UK, 02UK, 03UK, 04UK. 01BG, 02BG, 03BG, 04BG	8
5	**Aromatic amines**	100%	241, 242, 341	01DE, 04DE, 05DE. 01AT, 01CH, 03CH. 01RO, 02RO, 02UK	9
6	**Formaldehyde**	100%	all	all incl. 04CH	35
~~7~~	~~**Glutaraldehyde**~~	~~0%~~	-	-	~~0~~
8	**Organotin compounds**	11%	277	05CH, 06CH, 07CH	3
9	**Chlorinated paraffins**	11%	285	01CH, 02CH, 03CH, 05CH	4

10	**AOX**	22%	294, 393	05AT, 06AT, 07AT. 01BG, 02BG, 03BG, 04BG	7
11	**Chromium**	100%	all	all except CH4	34
12	**Lead**	78%	261,262,263,264,265,266,363	01DE, 02DE, 02DE, 04DE. 05DE, 06DE, 07DE. 01AT, 02AT, 03AT, 04AT. 05AT, 06AT, 07AT. 01CH, 02CH, 03CH, 05CH. 06CH, 07CH, 01NL, 02NL, 01DE, 02DE, 03DE, 04DE. 05DE, 06DE, 07DE. 01CH, 02CH, 03CH, 05CH. 05UK, 03NL, 01RO, 02RO. 01BG, 02BG, 03BG, 04BG	22
13	**Mercury**	56%	261,262,265,362,363		19
14	**Boron**	11%	266	06CH, 07CH, 01NL, 02NL	4

1.1 [iv] Results

1.1.1 Results of the Investigation for Alkylphenols and Alkylphenol ethoxylate

Sample	**Sample description**	**NP [mg/kg]**	**OP [mg/kg]**	**NPEO [mg/kg]**	**OPEO [mg/kg]**
H 4821 FT - 1	03_NL, Species: Racoon, Amount: 50g, Colour: brown black	11	n.n.	610	n.n.
H 4821 FT - 2	01_UK, Species: Mink, Amount: 175g, Colour: black	9	n.n.	270	82
H 4821 FT - 3	02_UK, Species: Arctic Fox, Amount: 125g, Colour: black	7	n.n.	57	n.n.
H 4821 FT - 4	03_UK, Species: Raccoon dog, Amount: 155g, Colour: brown black	11	n.n.	75	19

H 4821 FT - 5	04_UK, Species: Racoon, Amount: 136g, Colour: brown black	33	n.n.	2100	10
H 4821 FT - 6	05_UK, Species: Raccoon dog, Colour: brown black	12	n.n.	125	n.n.
H 4821 FT - 7	01_BG, Species: Fox (to the pony jacket), Amount: 100-200g (collar), Colour: grey-white -black	6	n.n.	140	n.n.
H 4821 FT - 8	02_BG, Species: Mink, Amount: 136g, Colour: brown	9	n.n.	180	n.n.
H 4821 FT - 9	03_BG, Species: Seal, Amount: 96g, Colour: Grey shades	8	n.n.	85	n.n.
H 4821 FT - 10	04_BG, Species: Fox, Amount: 124g, Colour: white -grey	n.n.	n.n.	190	250
H 4821 FT - 11	01_RO, Species: Fox, Amount: 226g, Colour: blue (coloured)	14	n.n.	170	n.n.
H 4821 FT - 12	02_RO, Species: Mink, Amount: 140g, Colour: black	9	n.n.	170	n.n.

n.n. = not detected
NP = Nonylphenol
NPEO = Nonylphenol ethoxylate
OP = Octylphenol
OPEO = Octylphenol ethoxylate
Detectable limit Alkylphenol: each 5 mg/kg
Detectable limit Alkylphenol ethoxylate: each 10 mg/kg

Sample	Sample description	NP [mg/kg]	OP [mg/kg]	NPEO [mg/kg]	OPEO [mg/kg]
H 4674 FT - 1	01_DE, Species: Fox, Amount: 100g, Colour: black	n.n.	n.n.	14	n.n.
H 4674 FT - 2	02_DE, Species: Raccoon dog, Amount: 60g, Colour: brown black	n.n.	n.n.	170	n.n.
H 4674 FT - 3	03_DE, Species: Fox, Amount: 110g, Colour: brown	5	n.n.	480	93
H 4674 FT - 4	04_DE, Species: Racoon, Amount: xxg, Colour: brown	3	n.n.	430	n.n.
H 4674 FT - 5	05_DE, Species: Fox/Rabbit, Amount: 100g, Colour: black	7	n.n.	120	39
H 4674 FT - 6	06_DE, Species: Fox, Amount: 60g, Colour: greyblack	3	n.n.	130	n.n.
H 4674 FT - 7	07_DE, Species: Raccoon dog, Amount: 48g, Colour: brown black	7	n.n.	1100	720
H 4674 FT - 8	01_AT, Species: Fox, Amount: 58g, Colour: black	8	n.n.	17	n.n.

H 4674 FT - 9	02_AT, Species: Raccoon dog, Amount: 58g, Colour: brown	5	n.n.	360	n.n.
H 4674 FT - 10	03_AT, Species: Racoon, Amount: 42g, Colour: brown black	n.n.	n.n.	330	n.n.
H 4674 FT - 11	04_AT, Species: Raccoon dog, Amount: 153g, Colour: brown black	3	n.n.	350	n.n.
H 4674 FT - 12	05_AT, Species: Raccoon dog, Amount: 74g, Colour: grey-white	n.n.	n.n.	190	75
H 4674 FT - 13	06_AT, Species: Raccoon dog, Amount: 41g, Colour: brown	8	n.n.	2500	5
H 4674 FT - 14	07_AT, Species: Racoon plus Rabbit, Amount: 326g, Colour: xxx	6	n.n.	430	n.n.
H 4674 FT - 15	01_CH, Species: Raccoon dog, Amount: 161g, Colour: green	4	n.n.	280	n.n.
H 4674 FT - 16	02_CH, Species: Fox, Amount: 40g, Colour: grey	5	n.n.	1200	n.n.

Sample	**Sample description**	**NP [mg/kg]**	**OP [mg/kg]**	**NPEO [mg/kg]**	**OPEO [mg/kg]**
H 4674 FT - 17	03_CH, Species: Fox, Amount: 74g, Colour: colourful	16	n.n.	1400	260
H 4674 FT - 18	04_CH, Species: Mink, Amount: 11g, Colour: black	15	n.n.	810	n.n.
H 4674 FT - 19	05_CH, Species: Mink, Amount: 129g, Colour: brown	n.n.	n.n.	130	n.n.
H 4674 FT - 20	06_CH, Species: Raccoon dog, Amount: 100g, Colour: brown black	n.n.	n.n.	180	n.n.
H 4674 FT - 21	07_CH, Species: Fox, Amount: 101g, Colour: brown	6	n.n.	600	n.n.
H 4674 FT - 22	01_NL, Species: Raccoon dog, Amount: 150g, Colour: brown black	6	n.n.	140	5
H 4674 FT - 23	02_NL, Species: Fox, Amount: 2x160g, Colour: grey	6	n.n.	64	n.n.

n.n. = not detected
NP = Nonylphenol
OP = Octylphenol
NPEO = Nonylphenol ethoxylate
OPEO = Octylphenol ethoxylate
Detectable limit Alkylphenol: each 3 mg/kg
Detectable limit Alkylphenol ethoxylate: each 5 mg/kg, Sample H 4674 FT-16: 50 mg/kg

1.1.2 Results of the Investigation for Preservatives

Parameter	H 4821 FT - 2 01_UK, Mink [mg/kg]	H 4821 FT – 3 02_UK, Arctic Fox [mg/kg]	H 4821 FT - 4 03_UK, Raccoon dog [mg/kg]	NG [mg/kg]	Benchmark IVN* [mg/kg]
o-Phenylphenol	52	1.2	14	0.5	
4-Chloro-3-Methylphenol	1.6	0.7	4	0.5	∑ ≤ 100

n.n. = not detectable, mg/kg = Milligramme per Kilogramme **NG = Determination limit**
* = International Association of the Natural Textile Industry e.V.

Parameter	H 4821 FT - 5 04_UK, Racoon [mg/kg]	H 4821 FT – 6 05_UK, Raccoon dog [mg/kg]	H 4821 FT - 7 01_BG, Fox [mg/kg]	NG [mg/kg]	Benchmark IVN* [mg/kg]
o-Phenylphenol	n.n.	n.n.	1.5	0.5	
4-Chloro-3-Methylphenol	3.5	9.3	6.6	0.5	∑ ≤ 100

n.n. = not detectable, mg/kg = Milligramme per Kilogramme **NG = Determination limit**
* = International Association of the Natural Textile Industry e.V.

Parameter	H 4821 FT - 8 02_BG, Mink [mg/kg]	H 4821 FT – 9 03_BG, Seal [mg/kg]	H 4821 FT - 10 04_BG, Fox [mg/kg]	NG [mg/kg]	Benchmark IVN* [mg/kg]
o-Phenylphenol	3.0	3.6	150	0.5	
4-Chloro-3-Methylphenol	5.3	12	1.6	0.5	∑ ≤ 100

n.n. = not detectable, mg/kg = Milligramme per Kilogramme **NG = Determination limit**
* = International Association of the Natural Textile Industry e.V.

1.1.3 Results of the Investigation for Organotin Compounds

Parameter	H 4674 FT - 19 05_CH, Mink, [mg/kg]	H 4674 FT - 20 06_CH, Raccoon dog [mg/kg]	H 4674 FT - 21 07_CH, Fox [mg/kg]	NG [mg/kg]	Benchmark IVN* [mg/kg]	Benchmark SG*[1] [mg/kg]
Monobutyltin (MBT)	1,2	n.n.	n.n.	0.05	≤ 0.05	≤ 1

Monooctyltin (MOT)	n.n.	n.n.	n.n.	0.05	≤ 0.05	
Dibutyltin (DBT)	n.n.	n.n.	n.n.	0.05	≤ 0.05	≤ 1
Dioctyltin (DOT)	n.n.	n.n.	n.n.	0.05	≤ 0.05	
Diphenyltin	n.n.	n.n.	n.n.	0.05	≤ 0.05	-
Tributyltin (TBT)	n.n.	n.n.	n.n.	0.05	≤ 0.05	≤ 0.05
Tetrabutyltin	n.n.	n.n.	n.n.	0.05	≤ 0.05	-
Tricyclohexyltin	n.n.	n.n.	n.n.	0.05	≤ 0.05	-
Trioctyltin (TOT)	n.n.	n.n.	n.n.	0.05	≤ 0.05	
Triphenyltin	n.n.	n.n.	n.n.	0.05	≤ 0.05	-

n.n. = not detected
NG = Determination limit
* = International Association of the Natural Textile Industry e.V.
*[1] = Inspection symbol for leather from TÜV Rheinland, Institut Fresenius and Testing and Research Institute Pirmasens

1.1.4 Results of the Investigation of Material Samples for DDT

Parameter	**H 4674 FT - 19** 05_CH Mink **[mg/kg]**	**NG** **[mg/kg]**
o,p-DDE	n.n.	0.5
p,p-DDE	4.4	0.5
o,p-DDD	1.2	0.5
p,p-DDD	4.2	0.5
o,p-DDT	19	0.5
p,p-DDT	50	0.5
Total DDT	**79**	

mg/kg = Milligramme per Kilogramme
n.n. = not detected
NG = Determination limit

1.1.5 Results of the Investigation for Chlorinated Paraffins

Parameter	**H 4674 FT - 15** 01_CH Raccoon dog **[mg/kg]**	**H 4674 FT - 16** 02_CH Fox **[mg/kg]**	**H 4674 FT - 17** 03_CH Fox **[mg/kg]**	**NG** **[mg/kg]**	**Benchmark IVN*** **[mg/kg]**
Chlorinated paraffins (C_{10}-C_{13})	n.n.	n.n.	n.n.	100	≤ 100

Chlorinated paraffins (C_{14}-C_{17})	n.n.	n.n.	990	100	-
Chlorinated paraffins (C_{18}-C_{20})	n.n.	n.n.	n.n.	100	-

NG = Determination limit n.n. = not detectable
* = International Association of the Natural Textile Industry e.V.

1.1.6 Results of the Investigation for Aromatic Amines

Parameter	CAS-No.	H 4821 FT - 3 02_UK, Arctic Fox [mg/kg]	H 4821 FT - 11 01_RO, Fox [mg/kg]	H 4821 FT - 12 02_RO, Mink. [mg/kg]	NG [mg/kg]	Benchmark IVN* [mg/kg]
MAK III 1						
4-Aminodiphenyl	92-67-1	n.n.	n.n.	n.n.	5	≤ 5
Benzidine	92-87-5	n.n.	n.n.	n.n.	5	≤ 5
4-Chloro-o-toluidine	95-69-2	n.n.	n.n.	n.n.	5	≤ 5
2-Naphthylamine	91-59-8	n.n.	n.n.	n.n.	5	≤ 5
o-Toluidine	95-53-4	n.n.	n.n.	n.n.	5	≤ 5
MAK III 2						
4-Chloroaniline	106-47-8	n.n.	n.n.	n.n.	5	≤ 5
2,4-Diaminoanisole	615-05-4	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Diaminodiphenylmethane	101-77-9	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dichlorobenzidine	91-94-1	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dimethoxybenzidine	119-90-4	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dimethylbenzidine	119-93-7	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	n.n.	n.n.	n.n.	5	≤ 5
p-Kresidin	120-71-8	n.n.	n.n.	n.n.	5	≤ 5
2-Methoxyaniline	90-04-0	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Methylene-bis(2-chloroaniline)	101-14-4	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Oxydianiline	101-80-4	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Thiodianiline	139-65-1	n.n.	n.n.	n.n.	5	≤ 5
2,4-Toluylenediamine	95-80-7	n.n.	n.n.	n.n.	5	≤ 5
2,4,5-Trimethylaniline	137-17-7	n.n.	n.n.	n.n.	5	≤ 5
2,4/2,6-Xylidine	95-68-1	n.n.	n.n.	n.n.	5	≤ 5
MAK III 3B						
5-Chloro-o-toluidine	95-79-4	n.n.	n.n.	n.n.	5	≤ 5
Phenylenediamine-Isomers	106-50-3	870	n.n.	n.n.	5	≤ 100*[2]
N,N-Dimethylaniline	121-69-7	n.n.	n.n.	n.n.	5	≤ 5
MAK III 4						

Aniline	62-53-3	n.n.	8	n.n.	5	≤ 100*[2]

n.n. = not detectable NG = Determination limit n.a.= not analysed
o-Aminoazotoluene [97-56-3] is analytically detected as o-Toluidine.
2-Amino-4-nitrotoluene [99-55-8] is analytically detected as 2,4-Toluylendiamine.
4-Aminoazobenzene [60-09-3] is also analytically detected as Aniline and p-Phenylenediamine.
* = International Association of the Natural Textile Industry e.V.
*[2]= Cumulative limit of Aniline and p-Phenylenediamine.

Parameter	CAS-No.	H 4674 FT-1 01_DE, Fox [mg/kg]	H 4674 FT-4 04_DE, Racoon [mg/kg]	H 4674 FT-5 05_DE, Fox/Rabbit. [mg/kg]	NG [mg/kg]	Benchmark IVN* [mg/kg]
MAK III 1						
4-Aminodiphenyl	92-67-1	n.n.	n.n.	n.n.	5	≤ 5
Benzidine	92-87-5	n.n.	n.n.	n.n.	5	≤ 5
4-Chloro-o-toluidine	95-69-2	n.n.	n.n.	n.n.	5	≤ 5
2-Naphthylamine	91-59-8	n.n.	n.n.	n.n.	5	≤ 5
o-Toluidine	95-53-4	n.n.	n.n.	n.n.	5	≤ 5
MAK III 2						
4-Chloraniline	106-47-8	n.n.	n.n.	n.n.	5	≤ 5
2,4-Diaminoanisole	615-05-4	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Diaminodiphenylmethane	101-77-9	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dichlorbenzidine	91-94-1	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dimethoxybenzidine	119-90-4	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dimethylbenzidine	119-93-7	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	n.n.	n.n.	n.n.	5	≤ 5
p-Kresidine	120-71-8	n.n.	n.n.	n.n.	5	≤ 5
2-Methoxyaniline	90-04-0	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Methylene-bis(2-chloraniline)	101-14-4	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Oxydianiline	101-80-4	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Thiodianiline	139-65-1	n.n.	n.n.	n.n.	5	≤ 5
2,4-Toluylenediamine	95-80-7	n.n.	n.n.	n.n.	5	≤ 5
2,4,5-Trimethylaniline	137-17-7	n.n.	n.n.	n.n.	5	≤ 5
2,4/2,6-Xylidine	95-68-1	n.n.	n.n.	n.n.	5	≤ 5
MAK III 3B						
5-Chloro-o-toluidine	95-79-4	n.n.	n.n.	n.n.	5	≤ 5
Phenylenediamine-Isomers	106-50-3	620	n.n.	n.n.	5	≤ 100*[2]
N,N-Dimethylaniline	121-69-7	n.n.	n.n.	n.n.	5	≤ 5
MAK III 4						
Aniline	62-53-3	25	n.n.	54	5	≤ 100*[2]
GLP-Verordnung, Tab. 3.1: K1B						
p-Aminoazobenzene	60-09-3	n.n.	n.a.	n.a.	5	≤ 100*[2]

n.n. = not detectable NG = Determination limit n.a.= not analysed
o-Aminoazotoluene [97-56-3] is analytically detected as o-Toluidine.

2-Amino-4-nitrotoluene [99-55-8] is analytically detected as 2,4-Toluylenediamine.
4-Aminoazobenzene [60-09-3] is also analytically detected as Aniline and p-Phenylenediamine.
* = International Association of the Natural Textile Industry e.V.

*² = Cumulative limit of Aniline and p-Phenylenediamine.

Parameter	CAS-No.	H 4674 FT - 8 01_AT Fox [mg/kg]	H 4674 FT - 15 01_CH, Raccoon dog [mg/kg]	H 4674 FT – 17 03_CH, Fox [mg/kg]	NG [mg/kg]	Benchmark IVN* [mg/kg]
MAK III 1						
4-Aminodiphenyl	92-67-1	n.n.	n.n.	n.n.	5	≤ 5
Benzidine	92-87-5	n.n.	n.n.	n.n.	5	≤ 5
4-Chloro-o-toluidine	95-69-2	n.n.	n.n.	n.n.	5	≤ 5
2-Naphthylamine	91-59-8	n.n.	n.n.	n.n.	5	≤ 5
o-Toluidine	95-53-4	n.n.	n.n.	n.n.	5	≤ 5
MAK III 2						
4-Chloraniline	106-47-8	n.n.	n.n.	n.n.	5	≤ 5
2,4-Diaminoanisole	615-05-4	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Diaminodiphenylmethane	101-77-9	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dichlorbenzidine	91-94-1	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dimethoxybenzidine	119-90-4	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dimethylbenzidine	119-93-7	n.n.	n.n.	n.n.	5	≤ 5
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	n.n.	n.n.	n.n.	5	≤ 5
p-Kresidine	120-71-8	n.n.	n.n.	n.n.	5	≤ 5
2-Methoxyaniline	90-04-0	n.n.	20	n.n.	5	≤ 5
4,4'-Methylene-bis(2-chloraniline)	101-14-4	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Oxydianiline	101-80-4	n.n.	n.n.	n.n.	5	≤ 5
4,4'-Thiodianiline	139-65-1	n.n.	n.n.	n.n.	5	≤ 5
2,4-Toluylenediamine	95-80-7	n.n.	n.n.	n.n.	5	≤ 5
2,4,5-Trimethylaniline	137-17-7	n.n.	n.n.	n.n.	5	≤ 5
2,4/2,6-Xylidine	95-68-1	n.n.	n.n.	n.n.	5	≤ 5
MAK III 3B						
5-Chloro-o-toluidine	95-79-4	n.n.	n.n.	n.n.	5	≤ 5
Phenylenediamine-Isomers	106-50-3	560	n.n.	n.n.	5	≤ 100*²
N,N-Dimethylaniline	121-69-7	n.n.	n.n.	n.n.	5	≤ 5
MAK III 4						
Aniline	62-53-3	27	6	21	5	≤ 100*²
GLP-Verordnung, Tab. 3.1: K1B						
p-Aminoazobenzene	60-09-3	n.n.	n.a.	n.a.	5	≤ 100*²

n.n. = not detectable NG = Determination limit n.a.= not analysed
o-Aminoazotoluene [97-56-3] is analytically detected as o-Toluidine.
2-Amino-4-nitrotoluene [99-55-8] is analytically detected as 2,4-Toluylenediamine.
4-Aminoazobenzene [60-09-3] is also analytically detected as Aniline and p-Phenylenediamine.

* = International Association of the Natural Textile Industry e.V.

*[2]= Cumulative limit of Aniline and p-Phenylenediamine.

1.1.7 Results of the Investigation for Formaldehyde

Sample	Sample description	Formaldehyde [mg/kg]
H 4821 FT - 1	03_NL, Species: Racoon, Amount: 50g, Colour: brown black	220
H 4821 FT - 2	01_UK, Species: Mink, Amount: 175g, Colour: black	51
H 4821 FT - 3	02_UK, Species: Arctic Fox, Amount: 125g, Colour: black	3
H 4821 FT - 4	03_UK, Species: Raccoon dog, Amount: 155g, Colour: brown black	45
H 4821 FT - 5	04_UK, Species: Racoon, Amount: 136g, Colour: brown black	62
H 4821 FT - 6	05_UK, Species: Raccoon dog, Colour: brown black	160
H 4821 FT - 7	01_BG, Species: Fox (on the pony jacket), Amount: 100-200g (collar), Colour: grey-white –black	130
H 4821 FT - 8	02_BG, Species: Mink, Amount: 136g, Colour: brown	37
H 4821 FT - 9	03_BG, Species: Seal, Amount: 96g, Colour: Grey shades	7
H 4821 FT - 10	04_BG, Species: Fox, Amount: 124g, Colour: white –grey	99
H 4821 FT - 11	01_RO, Species: Fox, Amount: 226g, Colour: blue (coloured)	17
H 4821 FT - 12	02_RO, Species: Mink, Amount: 140g, Colour: black	21
Benchmark IVN*		≤ 50
Benchmark SG*[1]		≤ 20*[2]

mg/kg = Milligramme per Kilogramme
n.n. = not detectable
Determination limit: 3 mg/kg
* = Leather benchmark of the International Association of the Natural Textile Industry e.V.
*[1] = Inspection symbol for leather from TÜV Rheinland, Institut Fresenius and Testing and Research Institute Pirmasens
*[2]= for children, 75 mg/kg for adults with skin contact

Sample	Sample description	Formaldehyde [mg/kg]
H 4674 FT - 1	01_DE, Species: Fox, Amount: 100g, Colour: black	31
H 4674 FT - 2	02_DE, Species: Raccoon dog, Amount: 60g, Colour: brown black	240
H 4674 FT - 3	03_DE, Species: Fox, Amount: 110g, Colour: brown	150
H 4674 FT - 4	04_DE, Species: Racoon, Amount: xxg, Colour: brown	19
H 4674 FT - 5	05_DE, Species: Fox/Rabbit, Amount: 100g, Colour: black	50
H 4674 FT - 6	06_DE, Species: Fox, Amount: 60g, Colour: grey-black	45
H 4674 FT - 7	07_DE, Species: Raccoon dog, Amount: 48g, Colour: brown black	200
H 4674 FT - 8	01_AT, Species: Fox, Amount: 58g, Colour: black	13
H 4674 FT - 9	02_AT, Species: Raccoon dog, Amount: 58g, Colour: brown	160

H 4674 FT - 10	03_AT, Species: Racoon, Amount: 42g, Colour: brown black	170
H 4674 FT - 11	04_AT, Species: Raccoon dog, Amount: 153g, Colour: brown black	28
H 4674 FT - 12	05_AT, Species: Raccoon dog, Amount: 74g, Colour: grey-white	250
H 4674 FT - 13	06_AT, Species: Raccoon dog, Amount: 41g, Colour: brown	550
H 4674 FT - 14	07_AT, Species: Racoon plus Rabbit, Amount: 326g, Colour: xxx	300
H 4674 FT - 15	01_CH, Species: Raccoon dog, Amount: 161g, Colour: green	55
H 4674 FT - 16	02_CH, Species: Fox, Amount: 40g, Colour: grey	210
H 4674 FT - 17	03_CH, Species: Fox, Amount: 74g, Colour: colourful	83
H 4674 FT - 18	04_CH, Species: Mink, Amount: 11g, Colour: black	63
H 4674 FT - 19	05_CH, Species: Mink, Amount: 129g, Colour: brown	29
H 4674 FT - 20	06_CH, Species: Raccoon dog, Amount: 100g, Colour: brown black	26
H 4674 FT - 21	07_CH, Species: Fox, Amount: 101g, Colour: brown	250
H 4674 FT - 22	01_NL, Species: Raccoon dog, Amount: 150g, Colour: brown black	47
H 4674 FT - 23	02_NL, Species: Fox, Amount: 2x160g, Colour: grey	54
Benchmark IVN*		≤ 50
Benchmark SG*[1]		≤ 20*[2]

mg/kg = Milligramme per Kilogramme
n.n. = not detectable
Determination limit: 3 mg/kg
* = Leather benchmark of the International Association of the Natural Textile Industry e.V.
*[1] = Inspection symbol for leather from TÜV Rheinland, Institut Fresenius and Testing and Research Institute Pirmasens
*[2]= for children, 75 mg/kg for adults with skin contact

1.1.8 Results of the Investigation on Material Samples for PAH

Parameter	**H 4821 FT - 7** 01_BG, Fox **[mg/kg]**	**H 4821 FT - 8** 02_BG, Mink **[mg/kg]**	**H 4821 FT – 9** 03_BG, Seal **[mg/kg]**	**Benchmark IVN * [mg/kg]**
Naphthalene	0.08	5.7	0.18	
Acenaphthylene	n.n.	n.n.	0.05	
Acenaphthene	n.n.	n.n.	n.n.	
Fluorene	n.n.	n.n.	n.n.	
Phenanthrene	0.24	0.26	0.24	
Anthracene	n.n.	n.n.	n.n.	
Fluoranthene	0.14	0.10	0.12	
Pyrene	0.15	0.12	0.24	
Chrysene	n.n.	n.n.	n.n.	0.2
Benzo(a)anthracene	0.09	n.n.	n.n.	0.2
Benzo(b)fluoranthene	n.n.	n.n.	n.n.	0.2
Benzo(k)fluoranthene	n.n.	n.n.	n.n.	0.2

Benzo(a)pyrene	n.n.	n.n.	n.n.	0.2
Indeno(1,2,3-cd)pyrene	n.n.	n.n.	n.n.	0.2
Dibenzo(a,h)anthracene	n.n.	n.n.	n.n.	0.2
Benzo(g,h,i)perylene	n.n.	n.n.	n.n.	0.2
Total PAH	**0.70**	**6.2**	**0.83**	**5**

mg/kg = Milligramme per Kilogramme n.n. = not detectable Detectable limit= each 0.05 mg/kg
* = Leather benchmark of the International Association of the Natural Textile Industry e.V.

Parameter	**H 4821 FT - 10** 04_BG, Fox **[mg/kg]**	**Benchmark IVN * [mg/kg]**
Naphthalene	0.36	
Acenaphthylene	n.n.	
Acenaphthene	n.n.	
Fluorene	n.n.	
Phenanthrene	0.10	
Anthracene	n.n.	
Fluoranthene	n.n.	
Pyrene	n.n.	
Chrysene	n.n.	0.2
Benzo(a)anthracene	n.n.	0.2
Benzo(b)fluoranthene	n.n.	0.2
Benzo(k)fluoranthene	n.n.	0.2
Benzo(a)pyrene	n.n.	0.2
Indeno(1,2,3-cd)pyrene	n.n.	0.2
Dibenzo(a,h)anthracene	n.n.	0.2
Benzo(g,h,i)perylene	n.n.	0.2
Total PAH	**0.46**	**5**

mg/kg = Milligramme per Kilogramme n.n. = not detectable
Detectable limit= each 0.05 mg/kg
* = Leather benchmark of the International Association of the Natural Textile Industry e.V.

Parameter	**H 4674 FT - 1** 01_DE Fox **[mg/kg]**	**H 4674 FT - 2** 02_DE Raccoon dog **[mg/kg]**	**H 4674 FT - 3** 03_DE Fox **[mg/kg]**	**Benchmark IVN * [mg/kg]**
Naphthalene	0.12	0.12	0.13	
Acenaphthylene	n.n.	n.n.	0.06	
Acenaphthene	n.n.	n.n.	n.n.	
Fluorene	n.n.	n.n.	n.n.	
Phenanthrene	0.16	0.58	0.40	
Anthracene	n.n.	n.n.	0.07	
Fluoranthene	0.06	n.n.	1.5	
Pyrene	n.n.	0.29	1.6	
Chrysene	n.n.	0.09	0.79	0.2

Benzo(a)anthracene	n.n.	0.21	0.92	0.2
Benzo(b)fluoranthene	n.n.	n.n.	0.43	0.2
Benzo(k)fluoranthene	n.n.	n.n.	0.18	0.2
Benzo(a)pyrene	n.n.	n.n.	0.22	0.2
Indeno(1,2,3-cd)pyrene	n.n.	n.n.	0.15	0.2
Dibenzo(a,h)anthracene	n.n.	n.n.	n.n.	0.2
Benzo(g,h,i)perylene	n.n.	n.n.	0.19	0.2
Total PAH	**0.34**	**1.3**	**6.6**	**5**

mg/kg = Milligramme per Kilogramme n.n. = not detectable Detectable limit= each 0.05 mg/kg
* = Leather benchmark of the International Association of the Natural Textile Industry e.V.

Parameter	**H 4674 FT - 4** 04_DE Racoon **[mg/kg]**	**H 4674 FT - 15** 01_CH Raccoon dog **[mg/kg]**	**H 4674 FT - 16** 02_CH Fox **[mg/kg]**	**Benchmark IVN * [mg/kg]**
Naphthalene	0.10	0.25	0.22	
Acenaphthylene	n.n.	n.n.	n.n.	
Acenaphthene	n.n.	n.n.	n.n.	
Fluorene	0.11	n.n.	n.n.	
Phenanthrene	0.73	0.11	0.12	
Anthracene	n.n.	n.n.	n.n.	
Fluoranthene	0.20	0.06	0.12	
Pyrene	1.3	0.06	0.18	
Chrysene	0.16	n.n.	n.n.	0.2
Benzo(a)anthracene	0.48	n.n.	0.05	0.2
Benzo(b)fluoranthene	0.05	n.n.	n.n.	0.2
Benzo(k)fluoranthene	n.n.	n.n.	n.n.	0.2
Benzo(a)pyrene	n.n.	n.n.	n.n.	0.2
Indeno(1,2,3-cd)pyrene	n.n.	n.n.	n.n.	0.2
Dibenzo(a,h)anthracene	n.n.	n.n.	n.n.	0.2
Benzo(g,h,i)perylene	n.n.	n.n.	n.n.	0.2
Total PAH	**3.1**	**0.48**	**0.69**	**5**

Parameter	**H 4674 FT - 17** 03_CH Fox **[mg/kg]**	**H 4674 FT - 19** 05_CH Mink **[mg/kg]**	**Benchmark IVN * [mg/kg]**
Naphthalene	0.13	0.36	
Acenaphthylene	n.n.	n.n.	
Acenaphthene	n.n.	n.n.	

Fluorene	0.05	n.n.	
Phenanthrene	0.98	0.51	
Anthracene	0.19	0.05	
Fluoranthene	0.40	0.62	
Pyrene	0.64	0.51	
Chrysene	0.10	0.13	0.2
Benzo(a)anthracene	0.13	0.65	0.2
Benzo(b)fluoranthene	0.06	0.14	0.2
Benzo(k)fluoranthene	n.n.	n.n.	0.2
Benzo(a)pyrene	n.n.	n.n.	0.2
Indeno(1,2,3-cd)pyrene	n.n.	n.n.	0.2
Dibenzo(a,h)anthracene	n.n.	n.n.	0.2
Benzo(g,h,i)perylene	0.05	n.n.	0.2
Total PAH	**2.7**	**3.0**	**5**

mg/kg = Milligramme per Kilogramme n.n. = not detectable Detectable limit= each 0.05 mg/kg

* = Leather benchmark of the International Association of the Natural Textile Industry e.V.

1.1.9 Results of the Investigation for AOX

Parameter	**H 4821 FT - 7** 01_BG, Fox **[mg/kg]**	**H 4821 FT - 8** 02_BG, Mink **[mg/kg]**	**H 4821 FT – 9** 03_BG, Seal **[mg/kg]**	**H 4821 FT - 10** 04_BG, Fox **[mg/kg]**	**NG** **[mg/kg]**
AOX	20	60	200	9	0.5

n.n. = not detectable mg/kg = Milligramme per Kilogramme NG = Determination limit

Parameter	**H 4674 FT - 12** 05_AT Raccoon dog **[mg/kg]**	**H 4674 FT - 13** 06_AT Raccoon dog **[mg/kg]**	**H 4674 FT - 14** 07_AT Racoon **[mg/kg]**	**NG** **[mg/kg]**
AOX	40	15	2.5	0.5

n.n. = not detectable mg/kg = Milligramme per Kilogramme NG = Determination limit

1.1.10 Results of the Investigation for Heavy Metals, Total Extraction

Sample	**Sample description**	**Lead [mg/kg]**	**Mercury [mg/kg]**	**Chromium [mg/kg]**
H 4821 FT - 1	03_NL, Species: Racoon, Amount: 50g, Colour: brown black	n.a.	< 0.1	860
H 4821 FT - 2	01_UK, Species: Mink, Amount: 175g, Colour: black	n.a.	n.a.	5
H 4821 FT - 3	02_UK, Species: Arctic Fox, Amount: 125g, Colour: black	n.a.	n.a.	7800

H 4821 FT - 4	03_UK, Species: Raccoon dog, Amount: 155g, Colour: brown black	n.a.	n.a.	150
H 4821 FT - 5	04_UK, Species: Racoon, Amount: 136g, Colour: brown black	n.a.	n.a.	2600
H 4821 FT - 6	05_UK, Species: Raccoon dog, Colour: brown black	n.a.	0.1	11
H 4821 FT - 7	01_BG, Species: Fox (on the pony jacket), Amount: 100-200g (collar), Colour: grey-white -black	0.5	0.1	5400
H 4821 FT - 8	02_BG, Species: Mink, Amount: 136g, Colour: brown	2.5	2.1	215
H 4821 FT - 9	03_BG, Species: Seal, Amount: 96g, Colour: Grey shades	2.5	0.1	3500
H 4821 FT - 10	04_BG, Species: Fox, Amount: 124g, Colour: white -grey	0.5	0.1	3
H 4821 FT - 11	01_RO, Species: Fox, Amount: 226g, Colour: blue (coloured)	n.a.	0.3	4500
H 4821 FT - 12	02_RO, Species: Mink, Amount: 140g, Colour: black	n.a.	< 0.1	9900

< = smaller than
n.a. not analysed
Determination limit Lead: 0.5 mg/kg
Determination limit Mercury: 0.1 mg/kg
Determination limit Chromium: 1 mg/kg

Sample	**Sample description**	**Lead [mg/kg]**	**Mercury [mg/kg]**	**Chromium [mg/kg]**	**Boron [mg/kg]**
H 4674 FT - 1	01_DE, Species: Fox, Amount: 100g, Colour: black	1	< 0.1	1100	n.a.
H 4674 FT - 2	02_DE, Species: Raccoon dog, Amount: 60g, Colour: brown black	0.5	< 0.1	2	n.a.
H 4674 FT - 3	03_DE, Species: Fox, Amount: 110g, Colour: brown	0.5	1.5	1900	n.a.
H 4674 FT - 4	04_DE, Species: Racoon, Amount: xxg, Colour: brown	1	< 0.1	12000	n.a.
H 4674 FT - 5	05_DE, Species: Fox/Rabbit, Amount: 100g, Colour: black	< 0.5	< 0.1	5500	n.a.
H 4674 FT - 6	06_DE, Species: Fox, Amount: 60g, Colour: grey-black	4.5	1.5	35	n.a.
H 4674 FT - 7	07_DE, Species: Raccoon dog, Amount: 48g, Colour: brown black	3	< 0.1	950	n.a.
H 4674 FT - 8	01_AT, Species: Fox, Amount: 58g, Colour: black	0.5	n.a.	2150	n.a.
H 4674 FT - 9	02_AT, Species: Raccoon dog, Amount: 58g, Colour: brown	0.5	n.a.	6	n.a.

H 4674 FT - 10	03_AT, Species: Racoon, Amount: 42g, Colour: brown black	1.5	n.a.	2200	n.a.
H 4674 FT - 11	04_AT, Species: Raccoon dog, Amount: 153g, Colour: brown black	< 0.5	n.a.	12	n.a.
H 4674 FT - 12	05_AT, Species: Raccoon dog, Amount: 74g, Colour: grey-white	< 0.5	n.a.	6000	n.a.

Sample	**Sample description**	**Lead [mg/kg]**	**Mercury [mg/kg]**	**Chromium [mg/kg]**	**Boron [mg/kg]**
H 4674 FT - 13	06_AT, Species: Raccoon dog, Amount: 41g, Colour: brown	0.5	n.a.	5	n.a.
H 4674 FT - 14	07_AT, Species: Racoon plus Rabbit, Amount: 326g, Colour: xxx	72	n.a.	18000	n.a.
H 4674 FT - 15	01_CH, Species: Raccoon dog, Amount: 161g, Colour: green	1	0.1	5200	n.a.
H 4674 FT - 16	02_CH, Species: Fox, Amount: 40g, Colour: grey	< 0.5	0.1	970	n.a.
H 4674 FT - 17	03_CH, Species: Fox, Amount: 74g, Colour: colourful	1.5	< 0.1	8300	n.a.
H 4674 FT - 19	05_CH, Species: Mink, Amount: 129g, Colour: brown	6.5	3.9	6	n.a.
H 4674 FT - 20	06_CH, Species: Raccoon dog, Amount: 100g, Colour: brown black	1.5	n.a.	260	< 5
H 4674 FT - 21	07_CH, Species: Fox, Amount: 101g, Colour: brown	3.5	n.a.	1700	< 5
H 4674 FT - 22	01_NL, Species: Raccoon dog, Amount: 150g, Colour: brown black	< 0.5	n.a.	5	< 5
H 4674 FT - 23	02_NL, Species: Fox, Amount: 2x160g, Colour: grey	3	n.a.	4	70

< = smaller than
n.a. not analysed
Determination limit Lead: 0.5 mg/kg
Determination limit Mercury: 0.1 mg/kg
Determination limit Chromium: 1 mg/kg
Determination limit Boron: 5 mg/kg

1.1.11 Results of the Investigation for Heavy Metals, Sweat Eluate

Sample	Sample description	Lead [mg/kg]	Mercury [mg/kg]	Chromium [mg/kg]
H 4821 FT - 1	03_NL, Species: Racoon, Amount: 50g, Colour: brown black	n.a.	n.a.	7
H 4821 FT - 3	02_UK, Species: Arctic Fox, Amount: 125g, Colour: black	n.a.	n.a.	15
H 4821 FT - 5	04_UK, Species: Racoon, Amount: 136g, Colour: brown black	n.a.	n.a.	11
H 4821 FT - 7	01_BG, Species: Fox (on the pony jacket), Amount: 100-200g (collar), Colour: grey-white -black	n.a.	n.a.	38
H 4821 FT - 8	02_BG, Species: Mink, Amount: 136g, Colour: brown	< 0.1	< 0.02	n.a.
H 4821 FT - 9	03_BG, Species: Seal, Amount: 96g, Colour: Grey shades	0.1	n.a.	110
H 4821 FT - 11	01_RO, Species: Fox, Amount: 226g, Colour: blue (coloured)	n.a.	n.a.	< 1
H 4821 FT - 12	02_RO, Species: Mink, Amount: 140g, Colour: black	n.a.	n.a.	48

< = smaller than
n.a. not analysed
Determination limit Lead: 0.1 mg/kg
Determination limit Mercury: 0.02 mg/kg
Determination limit Chromium: 1 mg/kg

Sample	Sample description	Lead [mg/kg]	Mercury [mg/kg]	Chromium [mg/kg]	Boron [mg/kg]
H 4674 FT - 1	01_DE, Species: Fox, Amount: 100g, Colour: black	n.a.	n.a.	< 1	n.a.
H 4674 FT - 2	02_DE, Species: Raccoon dog, Amount: 60g, Colour: brown black	n.a.	n.a.	< 1	n.a.
H 4674 FT - 3	03_DE, Species: Fox, Amount: 110g, Colour: brown	n.a.	< 0.02	9	n.a.
H 4674 FT - 4	04_DE, Species: Racoon, Amount: xxg, Colour: brown	n.a.	n.a.	80	n.a.
H 4674 FT - 5	05_DE, Species: Fox/Rabbit, Amount: 100g, Colour: black	n.a.	n.a.	18	n.a.
H 4674 FT - 6	06_DE, Species: Fox, Amount: 60g, Colour: grey black	0.1	< 0.02	n.a.	n.a.
H 4674 FT - 7	07_DE, Species: Raccoon dog, Amount: 48g, Colour: brown black	< 0.1	n.a.	3	n.a.
H 4674 FT - 8	01_AT, Species: Fox, Amount: 58g, Colour: black	n.a.	< 0.02	3	n.a.

H 4674 FT - 9	02_AT, Species: Raccoon dog, Amount: 58g, Colour: brown	n.a.	< 0.02	n.a.	n.a.
H 4674 FT - 10	03_AT, Species: Racoon, Amount: 42g, Colour: brown black	< 0.1	< 0.02	75	n.a.
H 4674 FT - 11	04_AT, Species: Raccoon dog, Amount: 153g, Colour: brown black	n.a.	< 0.02	n.a.	n.a.
H 4674 FT - 12	05_AT, Species: Raccoon dog, Amount: 74g, Colour: grey-white	n.a.	n.a.	55	n.a.
H 4674 FT - 14	07_AT, Species: Racoon plus Rabbit, Amount: 326g, Colour: xxx	0.3	n.a.	95	n.a.
H 4674 FT - 15	01_CH, Species: Raccoon dog, Amount: 161g, Colour: green	n.a.	n.a.	33	n.a.
H 4674 FT - 16	02_CH, Species: Fox, Amount: 40g, Colour: grey	n.a.	n.a.	48	n.a.
H 4674 FT - 17	03_CH, Species: Fox, Amount: 74g, Colour: colourful	< 0.1	n.a.	47	n.a.

Sample	**Sample description**	**Lead [mg/kg]**	**Mercury [mg/kg]**	**Chromium [mg/kg]**	**Boron [mg/kg]**
H 4674 FT - 19	05_CH, Species: Mink, Amount: 129g, Colour: brown	0.8	< 0.02	n.a.	n.a.
H 4674 FT - 20	06_CH, Species: Raccoon dog, Amount: 100g, Colour: brown black	0.1	n.a.	n.a.	n.a.
H 4674 FT - 21	07_CH, Species: Fox, Amount: 101g, Colour: brown	< 0.1	n.a.	16	n.a.
H 4674 FT - 23	02_NL, Species: Fox, Amount: 2x160g, Colour: grey	< 0.1	n.a.	n.a.	60

< = smaller than
Determination limit Lead: 0.1 mg/kg
Determination limit Chromium: 1 mg/kg

n.a. not analysed
Determination limit Mercury: 0.02 mg/kg
Determination limit Boron: 5 mg/kg

The samples 04DE, 03CH, 03AT, 05AT and 07 AT were further examined for chromium VI in the eluate. The results were negative:

2.1 Test Procedure for the investigation of Chrome VI

3 Results

3.1 Results of the examination of investigation of Chrome VI

Parameter	H 4674 FT – 4 04-DE, Specie: Racoon, Colour: brown [mg/kg]	H 4674 FT– 17 03-CH, Specie: Fox, Clour:multi-coloured [mg/kg]	H 4674 FT– 10 03-AT, Specie: Racoon, Colour: brownblack [mg/kg]	LD [mg/kg]
Chrom VI	n.n.	n.n.	n.n.	n.n.

Parameter	H 4674 FT – 12 05-AT, Specie: Racoon dog, Colour: grey-white [mg/kg]	H 4674 FM– 14 07 AT, Specie: Racoon plus Rabbit [mg/kg]	LD [mg/kg]
Chrom VI	n.n.	n.n.	n.n.

LD: Limit of detection mg/kg=Milligramme per Kilogramme < = smaller than