Edited by Thomas Höfer, Ursula Gundert-Remy, Astrid Epp, Gaby-Fleur Böl

REACH: Communication on Consumer Health Protection

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Preface

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Preface

The recent recalls of children's toys have raised the awareness of the public at large. They highlighted the fact that the safety of consumer products is not always a matter of course. Nonetheless, consumers are frequently not sufficiently aware of the close association between the regulation of chemical substances and the safety of consumer products which include, besides toys, cosmetics, textiles, cleaning products, building materials and many other articles. On 1 June 2007 the regulation on the **R**egistration, **E**valuation and **A**uthorisation of **Ch**emicals (**REACH**) came into force. It is a regulation of the European community and constitutes a major reform of European chemicals legislation. The introduction of the regulation leads to new communication and information duties both for manufacturers and retail distributors. However, these duties can also serve to provide consumers in future with information about substance properties to enable them to take informed decisions about chemicals and products. For consumers to really make use of these information opportunities, they must first be informed about REACH and the changes it entails.

Against this backdrop the Federal Institute for Risk Assessment took a timely decision to commission a project, the goal of which is to promote communication in consumer health protection circles on the new EU chemicals legislation. Within the framework of this project a comprehensible introduction was prepared to the currently valid and future chemical legislation from the angle of consumer protection. The results of this work are already available as a BfR brochure "REACH: The New Chemicals Policy in Europe". At the same time, an initial analysis was undertaken of the challenges that arise from communication with German consumers about chemicals legislation and the health safety of products. Finally, an overview was prepared of diverse risk communication tools in Japan, the USA and Spain.

Together this preparatory work the study has made a twofold contribution to creating a major component for further risk communication by BfR on REACH and chemical safety. Firstly, it provides information on existing deficits in communication with consumers about REACH and about any existing gaps in knowledge amongst consumers. BfR takes this information seriously and sees it as a call for further action. Hence, in future, BfR will continue its research in the field of risk communication on REACH and carry out other concrete communication projects with representatives of industry, political circles, science and associations in order to explain REACH in more depth to multipliers and consumers. The successful implementation of REACH is dependent not least on informed consumers.

Professor Dr. Dr. Andreas Hensel
President of the Federal Institute for Risk Assessment

1 Background and Goals

The system for the **R**egistration, **E**valuation and Authorisation of **Ch**emicals, hereinafter referred to as REACH, which was adopted on 18 December 2006 by the European Parliament and Council, fundamentally changes chemical policy in Europe. Henceforth, manufacturers and importers must prove the safety of chemicals. This constitutes a reversal in the burden of proof principle. Previously it had mainly been down to public authorities to identify problems and then oblige industry to solve them.

REACH is just one, albeit, important component in the construct of regulations which serve to protect consumers. REACH aims to close the gaps in the evaluation of existing substances, to bring about more transparency in the complex assessment procedure and, in this way, to increase the responsibility of chemical manufacturers and importers for the marketing authorisation and assessment of the substances distributed by them. REACH builds on existing chemicals legislation for the classification and labelling of substances and preparations. Other statutory regulations are not being repealed.

In the project "New EU Chemicals Policy: Communication on Consumer Health Protection", the changes were outlined which result from the added knowledge and transparency for consumers, existing communication deficits were identified, experiences from other countries were analysed and proposals elaborated for optimum communication.

Against this backdrop the achievement of the project goals called for work on four packages:

1. Elaboration of a comprehensive introduction to the currently valid and future chemicals legislation from the angle of consumer protection
2. Analysis of problems in communication with German consumers with regard to chemicals legislation and the health safety of products
3. Analysis of risk communication with consumers on the basis of experiences from three countries
4. Preparation of proposals for optimised communication

Within the framework of the project advice was sought from external experts who were members of a project working group. Some of them were asked to give individual interviews. The participants in the working group came from the sciences, political circles, industry, administrative bodies and consumer associations.

1.1 Methodological procedure used to draw up the information brochure

In line with the tender, the focus was initially on presenting an overview of the current system for classification, labelling and regulation based on the following directives for chemical public products (CPPs):

- EU Directive 67/548/EEC
- Preparations Directive 1999/45/EC
- Restrictions Directive 76/769/EEC
- Product Safety Directive 2001/95/EC

Special consideration was given to the following questions:

- Which gaps in the current system will be filled by REACH?
- What information can consumers expect from manufacturers and retailer distributors and
- What preconditions must be created in order to ensure that consumers are better informed about the health risks from CPPs and can make informed purchasing decisions?

Before these questions could be asked, there had to be clarity about the terms used and the priorities:

- What exactly are chemical public products (CPPs) and what are they not? Which ones are deemed to be preparations and which ones products?
- What information is available to consumers on the basis of statutory and voluntary regulations (e.g. Ecolabel)?
- Which endpoints in the REACH test methods are relevant for consumer health protection? How can the differentiation in the REACH data for substances with various volume thresholds be communicated? How can the lack of data (e.g. for substances in the import parts in articles) be communicated?
- The current regulation extended by REACH does not explicitly apply to consumer products and information for consumers. Also the requirements to be met by substances in products in Article 7 of the REACH regulation are primarily to be met by the manufacturer or importer. How can this be communicated to consumers?
- How can the information duty intended under the REACH system along the value added chain be communicated to consumers?
- What possibilities do the manufacturers of CPPs see for informing consumers (e.g. "REACH safe" label)?
- What possibilities do the retail distributors of CPPs see for informing consumers?

These questions called for an in-depth examination of the problem so as not to overload the information with details and to give realistic answers about what the future chemicals legislation can and cannot do for consumer health protection. The results of the work on the first work package were submitted as a 40-page brochure with various charts which was published in the spring of 2007 under the title "REACH: The New Chemicals Policy in Europe – How will things change for consumers? by the Federal Institute for Risk Assessment (BfR). The brochure has since been published in English.

1.2 Methodological procedure for need analysis of a communication concept

The discussions and the findings obtained from the first work package identified discrepancies between existing expectations on consumer health protection on the one hand and scientific and economic possibilities on the other. For instance the goal of a full assessment of all the potential health risks of all substances and products is not feasible for the simple reason that only a limited amount of test data was obtained for selected endpoints for some of the substances. What is needed is knowledge of existing expectations about current chemical legislation and future chemical legislation after the entry into force of REACH. To this end the following information was evaluated:

- Eurobarometer of the European Commission and other opinion polls
- Telephone survey of consumer associations, manufacturers, consumer protection associations and public authorities.

The outcome of the evaluation is the documentation of various expectations about what future chemical legislation can contribute to assessing the health risk. The information obtained was protocolled and evaluated with a view to establishing a viable concept for improving communication with consumers.

1.3 Methodological procedure for risk communication analysis in the USA, Japan and Spain

The approaches to risk communication vary from country to country. This has historic, cultural and economic roots. A careful analysis of the approaches and evaluation of experiences can provide valuable insight. The United States, Japan and Spain were selected as the countries for an in-depth, comparative examination.

The United States are the largest manufacturer in the world of chemical substances. At the same time, the US American chemical industry has a higher productivity in the areas of research and development (R+D) than EU companies. In the USA there was a demand far earlier in than in Europe for transparency in the declaration of consumer products and data on the amounts of chemicals used and emitted e.g. through the Toxics Release Inventory (TRI).

The industrial company, Japan, is the second biggest manufacturer of chemicals in the world. Given its high population density, consumers are very aware of this topic. Furthermore, Japan - alongside Germany and the USA - plays a leading role in the ICCA Initiative on the OECD-HPV chemicals programme which has set itself the goal of analysing 1000 high tonnage chemicals within the next five years around the world. It processes a large number of these substances.

Compared with the USA, Japan and Germany, Spain is a comparatively small producer of chemical substances (7 % market share of the EU-25). As a consequence of major economic growth in recent years, consumer awareness has increased.

The result of the work package is the targeted processing of experiences with risk communication in the above-mentioned countries. On that basis, proposals were elaborated for improving communication in Germany.

2 Need analysis for a communication concept

Consumer health protection must engage in a balancing act between existing expectations on the one hand and scientific and economic possibilities on the other. The goal of the complete evaluation of all potential health risks of all substances and products cannot be achieved for the simple reason that only a limited amount of test data were obtained for some of the substances. This means that the role of good consumer communication on possible health hazards from chemicals takes on even more importance. For this, insight is needed into the expectations of consumer communication after the entry into force of REACH.

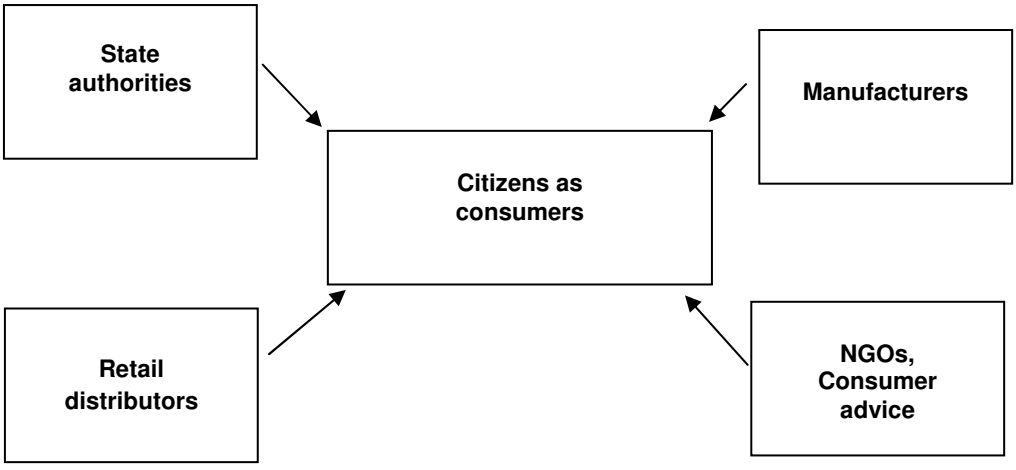
This chapter begins by pegging out the subject examined. Then the existing information components are presented in an overview. The expert interviews conducted and their results are described. The chapter ends with important parameters concerning target group differentiation, summary and recommendations.

2.1 Definition of the scope

Target group
In this chapter the focus is on people in Germany as private consumers[1] of products and substances containing potentially harmful[2] chemicals and on their purchasing and consumption experience in day to day life. No consideration is given here to the involvement of the citizen as an actively participating member in a risk regulation process, e.g. through involvement in expert bodies or focus groups that evaluate the health risks of chemicals. A series of other works is already available on this (cf. e.g. Hertel/Henseler (2005); Risikokommission (2003); OECD (2000); Renn/Kastenholz (2000)).

Stakeholders
The main stakeholders in consumer communication are presented in the following figure. Whereas citizens as consumers are the main target group of communication, public authorities, manufacturers, retail distributors and multipliers like non-governmental organisations (NGOs) or consumer advice bureaus also play an important role as information brokers and partners in the dialogue with consumers.

Figure 1: Stakeholders in communication on consumer protection



[1] It is *not* about commercial enterprises or their staff as the users of chemicals.
[2] The emphasis is on direct health hazards resulting from use of the products.

Consumption process and situations
The consumption process of citizens can be broken down into various stages:

- Preparation of shopping (preliminary information)
- Purchase decision (in favour of a specific product, e.g. in a shop)
- Use
- Disposal

Furthermore, the following situation is of specific interest for the subject of health hazards:

- Occurrence of damage (e.g. intoxication) and claim settlement

All these stages are deemed to be possible situations in which appropriate consumer communication can and should take place.

Functions of risk communication
According to Hertel and Henseler (2005, 85) comprehensive risk communication has the following tasks:

1. "To provide sound information on scientific research into the effects and side effects of products, substances and activities on the environment and health;
2. To seek agreement amongst the stakeholders and inform the population concerned about possible protective measures and behavioural changes (including communication about emergency measures);
3. To provide comprehensive information about the methods used to assess and weigh up the risks and benefits;
4. To clarify the viewpoints of interest groups concerned;
5. To make available and stage communication procedures on problem-driven and democratic involvement of the various stakeholders in the risk assessment process (planning and conflict management".

This study mainly deals with point 1, and in some parts with points 2 (informing the population about any protective measures) and 3 (information about assessment methods) as well.

Communication about risks and/or hazards?
In consumer communication should the emphasis be on hazards or risks? Or, to put this another way, which combinations should be used? Sometimes contradictory positions are adopted on this: on the one hand it is stressed that information which does not take into account the normally expected types of exposure and likelihood of damage occurring, could cause unnecessarily concern to consumers or even make them apprehensive. On the other hand there are fears that by linking information with the probability of the occurrence of damage, communication becomes too abstract and consumers could come to the wrong conclusions or relevant information on the hazards could be lost.

A further BfR research project on these questions was concluded in the summer of 2007. The results should be taken into account when shaping the further communication strategy.

2.2 Existing information components: overview

Table 1 gives an overview of the most important information components on the topic of health hazards associated with chemicals and products. They are briefly explained in the following sections.

Table 1: Overview: existing information components

	Component	Proactive	Fetch information
A	Hazard symbols in accordance with the Dangerous Substances Ordinance	x	
B	Safety instructions ("S-phrases")	x	
C	Risk instructions ("R-phrases")	x	
D	Product label [1]	x	
E	Safety data sheets [2]		x
F	Information on the Internet [3]		x
G	Product test magazines		x
H	Consumer advice		x
I	Further training [4]		x
J	Vocational training [5]	–	–
K	General education [6]	–	–

[1] e.g. Blauer Engel, Emicode
[2] Previous safety data sheets of manufacturers, including technical instructions
[3] e.g. information from industry on their products or databases like the former Chemical information system for consumer-relevant substances (CIVS) of BgVV
[4] e.g. evening classes, shopping guide
[5] linked to chemistry, biology, medicine, environment
[6] Chemistry/biology/physics lessons, natural phenomena/sciences

2.3 Evaluation of the literature

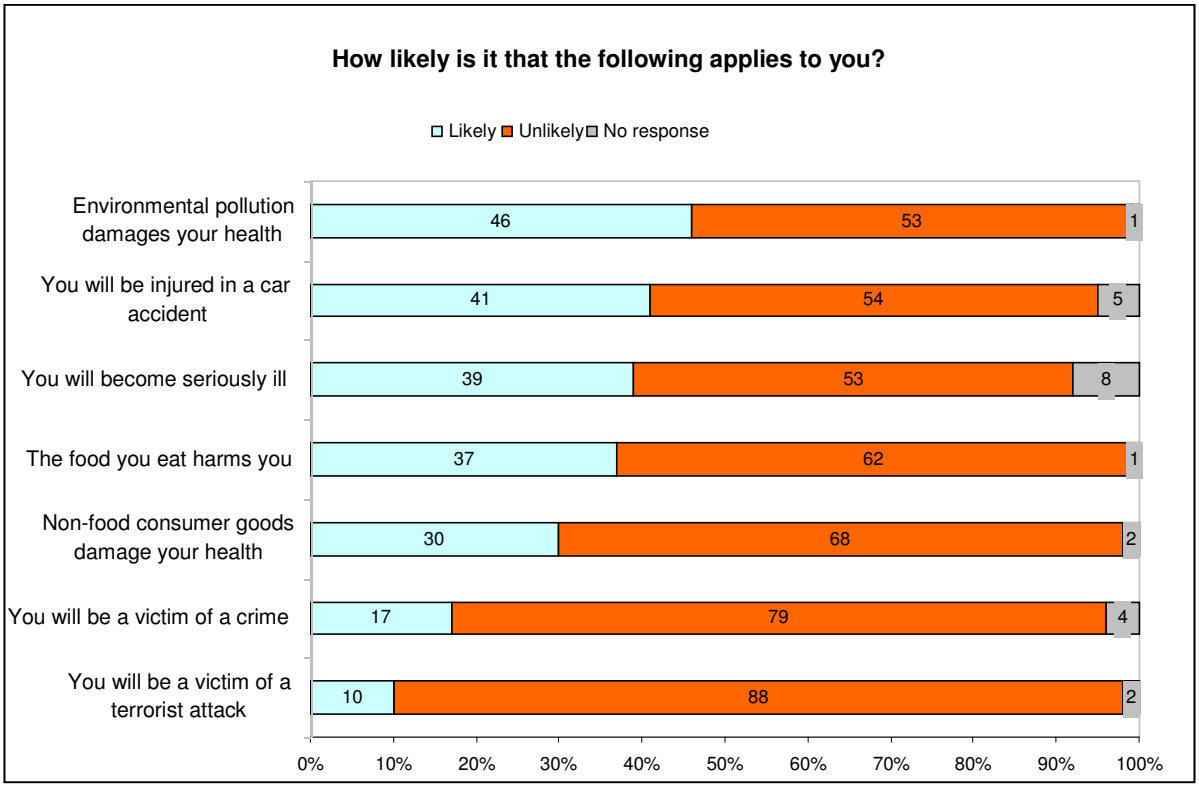
A comprehensive assessment of all the information components outlined above is not possible on the basis of the existing literature as no comparative or comparable evaluations are available as confirmed by research within the framework of this project. For that reason too, the expert interviews were evaluated in order to identify approaches to the systematic evaluation and classification of the existing information components (see Chapter 2.4, the section entitled “Need for action”). At this point results from current studies are presented to the extent that they offer insight into the communication strategies on consumer health protection.

2.3.1 Risk perception/assessment

In 2005 the European Commission (Directorate General Health and Consumer Protection) commissioned a survey of the European population which dealt specifically with the topic "risk" (EC 2006). One question looked at the evaluation of various health risks. It revealed that the German population considered the risks to their health from non-food consumer goods to be low. Around 68 % believe that these products are unlikely to harm them[3]. This applies at least in comparison to other health hazards like for instance environmental pollution or car accidents (cf. Fig. 2).

[3] The EU average (53%) is far lower. Nevertheless the Germans feel that they are comparatively safe.

Figure 2: Estimation of the risks from various events by the German population (data from EC 2006b; own analysis)



Another indication of the importance attached by consumers for instance to health aspects when purchasing clothing can be found in one study which was conducted on behalf of the Federation of German Consumer Organisations (vzbv 2004, Study Section Textiles). Consumers were asked what factors influenced them when buying clothes. They answered as follows:

- 56 % price
- 44 % quality and finishing
- 43 % textile fibres used
- 40 % appearance, style, fashion
- 9 % health aspects.

These reports confirm the opinion expressed by the majority of experts in the interviews that most people do not attribute any particular importance to this subject. Hence, they rarely actively seek out information.

2.3.2 Need for additional information

The vzbv (vzbv 2004) study mentioned above also looked at whether and, if so, what additional information is needed by consumers on various product groups. It looked at textiles, foods, cars, electricity and Riester pensions. In all the product groups examined, an additional need for information was identified which should be provided, according to consumers, by the manufacturers. It became very clear that

- "Consumers (…) are interested in information on product properties which could have a direct impact on their health safety;

- All the information mentioned refers to the properties of products and services which consumers are not in a position to judge – both during and after using the product (credence characteristics);
- especially in the product segment, food, a series of additional pieces of information is seen as important.“

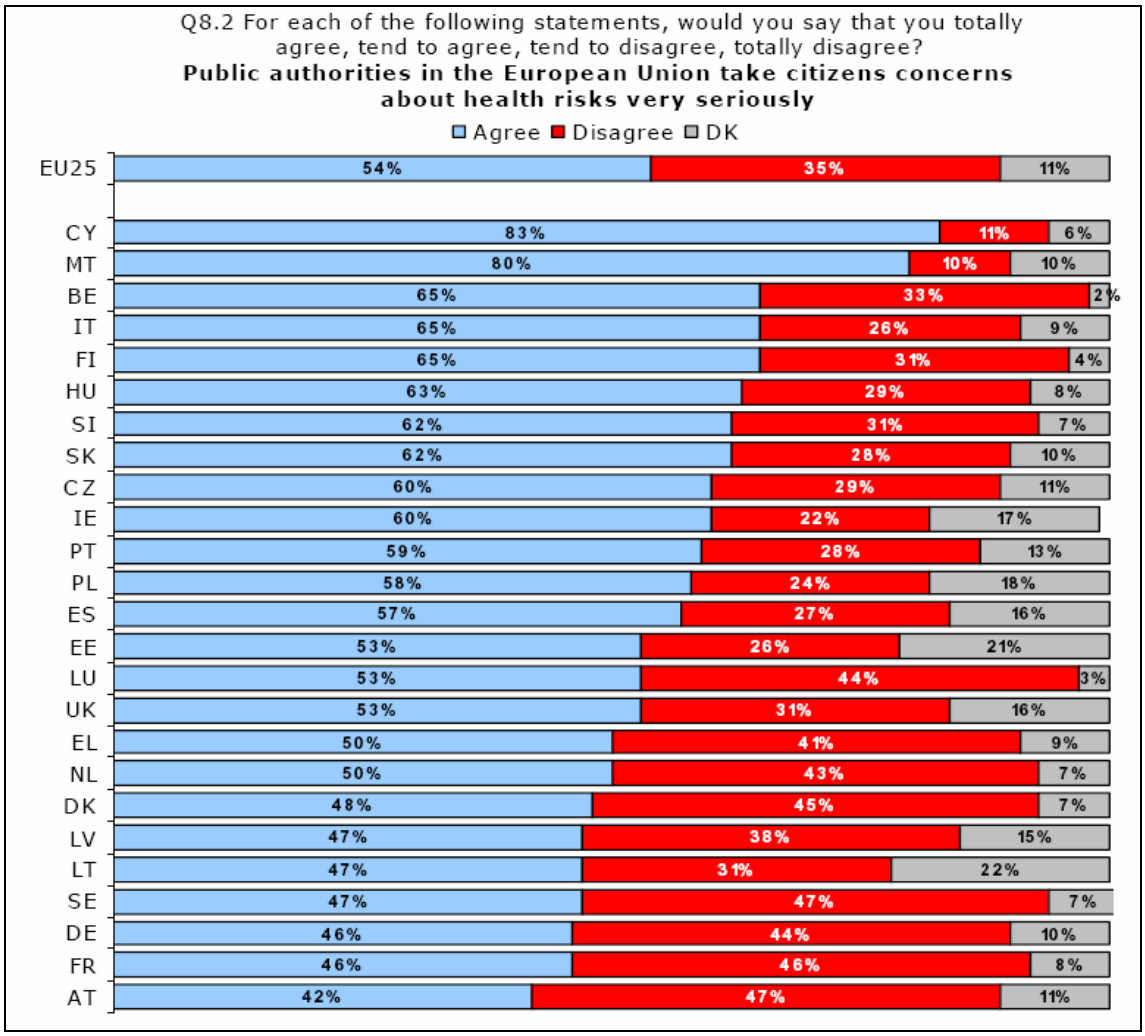
For textiles which are of interest here in conjunction with REACH, more information was desired in particular about possible allergenic substances. In the case of cars information about safety in conjunction with accidents was at the top of the information wish list.

Who should provide the information?

As additional information was desired especially on health safety requiring a high degree of trust because this information is not immediately comprehensible, then trust in the information provider plays an important role in communication. A study by the European Commission from 2005 showed that, compared to other EU Member States state, trust in public authorities in Germany is comparatively low (cf. Fig. 3) when it comes to their taking health concerns seriously. "vzbv observed that public authorities and state institutions are not seen by consumers as a relevant source of information for daily shopping” (2004, p. 23).

Hence, state institutions in Germany should seek co-operation with other institutions which enjoy a higher level of trust than them when communicating health-relevant information (e.g. with NGOs, citizens advice bureaus etc.). For instance BfR has enjoyed close co-operation for several years now with Stiftung Warentest (leading consumer safety group in Germany).

Figure 3: Trust of citizens in state institutions when dealing with health risks (from EC 2006)



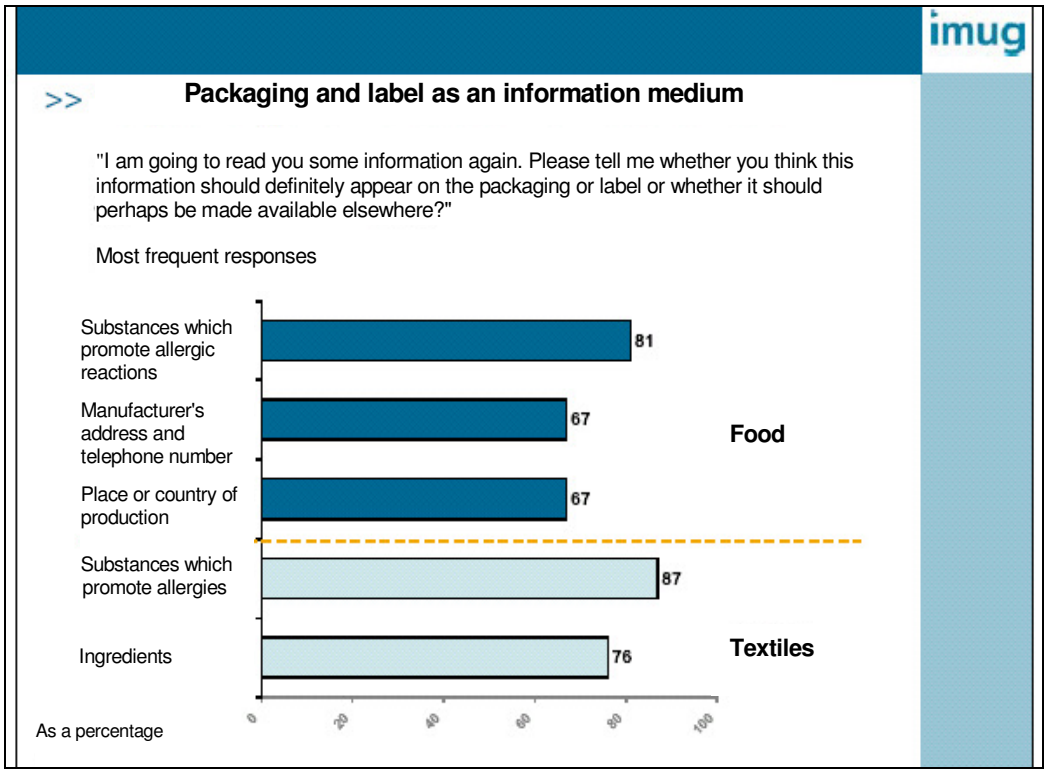
Where should the information be made available?

In the vzbv study (2004) it was observed that consumers would like to see health-relevant and direct product-related information about ingredients (particularly the ones with allergenic potential) on the packaging or label (cf. Fig. 4). Besides the label or packaging consumers can imagine other ways of facilitating their access to important information (cf. Fig. 5) (vzbv 2004, p. 17).

Tollfree telephone hotlines, access to documents in the shop or a search for information on the manufacturer's website are the favourite "alternative" accesses to manufacturer's information on food and textiles. In the case of textiles, the preferred option of many consumers is information which is available in the shop. Although telephone hotlines and information in the shop are given preference over the Internet in individual cases, the Internet is already today a medium for almost all products which can be used for the distribution of additional information when this is primarily fetch information as is the case for the contents discussed here. This information need not be accessed for every purchase but in individual cases and on the special initiative of consumers (fetch information). Between 20 % and 28 % of the interviewees would like to have information on electricity, textiles, foods and motor vehicles which is not supplied on the product but on the Internet (vzbv 2004, p. 18). The group of under 44-

year-olds listed the Internet in first place for all product groups aside from Riester pensions as the desired access path for more comprehensive information.

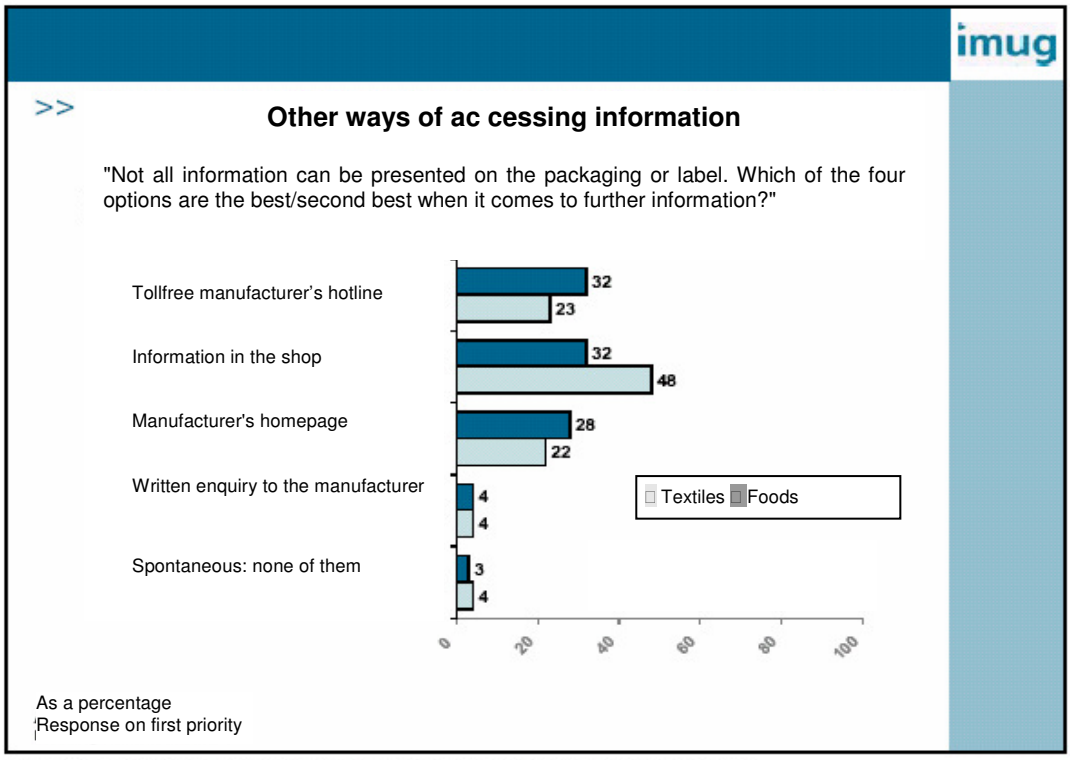
Figure 4: Packaging and label as an information medium (from vzbv 2004)



How standardised and comparable should the information be?

Consumers always benefit from information offerings when as many manufacturers of a specific product as possible make substantial statements on the product available in a uniform manner. Information on the nutritional value of products or the statutory price referred to basic weight are examples of information which enable consumers to really compare various foods on the basis of one aspect which is relevant for their purchasing decision. The environmental labels mentioned above also facilitate comparison of products. By means of simple signalling (e.g. "bears the bioseal" or "does not bear the bioseal"), consumers can distinguish relatively easy between products.

Figure 5: Other ways of accessing information (from vzbv 2004)



Signalling of this kind in which specific properties of the product are advertised in an obvious manner, will only be possible in a few cases in conjunction with the consumers' need for additional information identified in the vzbv study. The information about ingredients with allergenic potential will not have simple signalling character but will constitute a comprehensive list drawn up in line with specific criteria. For consumers in such cases it seems to be particularly important that the information is provided if possible by several manufacturers in the same and, therefore, comparable manner (vzbv 2005, p. 20). Otherwise there is a risk of fostering a feeling of uncertainty which can become a market penetration obstacle for the product group (cf. Riester pensions) or at least impede or prevent the systematic sourcing and assessment of information or a systematic comparison of information which is necessary for an informed decision on risks.

The study concludes that a comprehensible, comparable and therefore standardised presentation of information about complex products with predominant credence properties is an essential element of successful market acceptance and market development (vzbv 2005, p. 22, cf. also Femers 2003).

2.4 Expert interviews

The goal was to interview up to 20 people who have been involved for some time in their work with possible health hazards from chemicals and communication on them. In principle, various perspectives were to be taken into account: consumers, representatives of manufacturers/industry and the sciences. Interviews were conducted with 14 people from the numerous institutions contacted, as can be seen from Table 2. For data protection reasons only the organisations are listed.

Table 2: Overview: interviews conducted

Perspective	Interviews conducted	Number	Other institutions contacted with whom no interviews were conducted[1]
Consumers	• BUND für Umwelt und Naturschutz Deutschland (Friends of the Earth Germany) • Landesverband der UmweltberaterInnen in Berlin und Brandenburg (Regional Association of Environmental Consultants) • Stiftung Warentest (Foundation for Comparative Product Testing) • Verbraucherzentrale Bundesverband (vzbv) (Federation of German Consumer Organisations) • Verbraucherzentrale Sachsen-Anhalt (Consumer Advice Bureau Saxony-Anhalt)	5	• Greenpeace • Öko-Test • Consumer initiatives
Industry	• Bundesverband deutscher Heimwerker-, Bau- und Gartenfachmärkte (BHB) (German Association of DIY and Garden Centres) • European Disposables and Nonwovens Association (EDANA) • Industrieverband Körperpflege und Waschmittel (IKW) (German Cosmetic, Toiletry, Perfumery and Detergent Association) • Rheinische Kunststoffwerke RKW-AG (Rhine Plastics Plants) • Verband der Chemischen Industrie (VCI)(German Chemical Industry Association)	5	• Bundesverband Elektro-Großhandel (Federal Association of the Electrical Wholesale Trade) • Bundesverband Informationswirtschaft, Telekommunikation und neue Medien (BITKOM) (German Association for Information Technology, Telecommunications and New Media) • Modeverband Deutschland (German Fashion Association) • Zentralverband Elektrotechnik- und Elektronikindustrie (ZVEI) (German Electrical and Electronics Industry Association)
Sciences	• Institut für ökologische Wirtschaftsforschung (IÖW) (Institute for Ecological Economics Research) • Fraunhofer Institut für System- und Innovationsforschung (ISI) (Fraunhofer Institute for Systems and Innovation Research) • Öko-Institut (Institute for Applied Ecology) • Universität Stuttgart, Institut für Sozialwissenschaften (Stuttgart University, Institute of the Social Sciences)	4	• Carl v. Ossietzky Universität Oldenburg (University) • Ökopol (Institute for Environmental Studies) • Universität Hohenheim, FG Haushalts- und Konsumökonomik (Hohenheim University, Department of Household and Budgetary and Consumption Economics)

1: Most frequent reason given for the non-staging of interviews was the fact that no partners could be found who were sufficiently competent to assess the wide spectrum of topics covered here. The second most frequent reason was lack of time.

The questionnaire, which was co-ordinated with the client, consisted of a total of 27 standardised as well as unprompted questions (cf. Annex B). Because of this combination, trends could be clearly identified despite the limited number of interviews. Furthermore, because of the unprompted answer options there was an opportunity to record more particularly the reasons for the answers given which are of key importance for the later recommendations. Table 3 gives the questionnaire structure.

Table 3: Structure of the questionnaire for the expert interviews

Topic	Function	Number of questions
A) Theories	Introduction and fundamental assessment of information needs of consumers	4
B) Need for action	Identification of the most important product groups, information components and target groups	5
C) In-depth questions on selected information components	Communication paths selected by way of example with different degrees of "proximity to the product": Label and labelling Information sheets Public information system on the Internet	16
D) Opportunities and risks of REACH	Fundamental assessment of the impact of the implementation of REACH on aspects of consumer communication (data accessibility, transparency, topicality ...)	2

The questions on topics A to C were largely dealt with independently of REACH. This reflected the fact that, in principle, REACH does not initially focus on communication on the consumer side but rather on an exchange of information along the manufacturing chain down to retail distributors. Hence, a fundamental analysis of the need for action on consumer communication on health aspects of chemicals in public products was possible. Finally, through the final set of questions, a link was established to REACH and its possible impact on consumer communication.

2.4.1 Survey results

The answers were differentiated according to various perspectives

- Consumers (C),
- Industry (I) and
- Science (S)

in order to present any differences in the positions. These differentiations are indicated in the figures. The average of all answers is indicated by **A** (cf. Fig. 6).

Theories of the interviewees

A) Information policy sufficient up to now?

The vast majority of the interviewees were of the opinion that the previous information policy on health aspects of chemicals in public products was not sufficient. Industry representatives tended to be more positive (cf. Fig. 6).

B) Ability of the population to judge risks

On average less than 40 % of the interviewees believe that the population is in a position to judge health risks. In their estimate the consumer representatives (around 50 %) are slightly higher than the average.

C) State task or a personal decision?

There was large-scale agreement amongst the interviewees that more than 70 % of the population would prefer to state to decide whether a product entails chemical risks for them rather than having to deal with this themselves.

D) Information on risks or hazards?

There were major differences between industry representatives on the one hand and representatives of consumers and the sciences on the other concerning the question whether information on *risks* instead of *hazards* was sufficient for consumers. Whereas industry agreed with this statement, the others in general did not.

Figure 6: Previous information policy on health aspects of chemicals in public products is generally sufficient

Totally agree	Generally agree	Tend to agree	Tend not to agree	Generally disagree	Totally disagree
		I		S C	

No information: 0

Figure 7: What percentage of the population would you describe as *being able to judge a risk* (concerning the health risks in public products)?

0 to 20	20 to 40	40 to 60	60 to 80	80 to 100
	A I S	C		

No information: 3

Figure 8: What percentage of the population would like to have the decision whether a product entails chemical risks for them taken preferably by the state rather than having to decide themselves?

0 to 20	20 to 40	40 to 60	60 to 80	80 to 100
			A S C I	

No information: 4

Figure 9: Information on the health risks of chemicals in products is sufficient (instead of about hazards)

Totally agree	Generally agree	Tend to agree	Tend not to agree	Generally disagree	Totally disagree
		I	A	C+S	

No information: 1

Need for action

E) Information strategy: Proactive versus fetch offers?

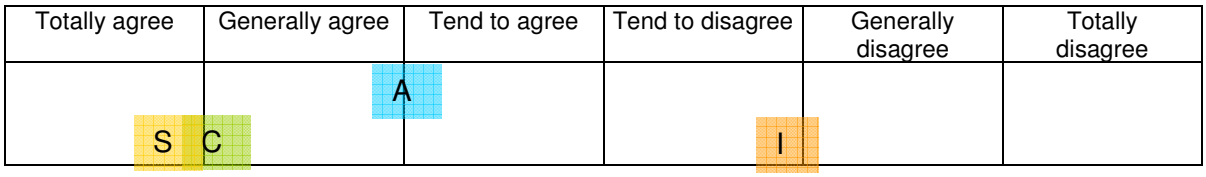
Whereas the representatives of the sciences and consumers would like to see a far more proactive information strategy on ingredients and their health aspects, industry representatives tend towards extending the fetch information offerings. The former are of the opinion that

- a more proactive strategy would lead to greater transparency as long as the information is properly selected and processed,
- fetch offerings are not used enough because of the effort involved and the low level of interest,
- consumers didn't know what they should ask for,
- a more proactive strategy would leave companies more scope for their information policy,
- the number of people was growing who needed more extensive information on products (e.g. allergy sufferers).

The counter-arguments advanced were that

- more information would lead to an information overload of consumers which would make them nervous,
- a more proactive strategy could only be pursued when there was a clear, justified suspicion of a risk.

Figure 10: Generally speaking, should a more proactive information strategy be pursued on ingredients and their health aspects (instead of building up a so-called fetch information offering?



No information: 1

F) Product areas with a need for action

In all product areas covered a need was seen for at least some or more extensive action in order to improve communication with consumers (cf. Fig. 11). Almost all the industry representatives classified the need for action one level lower than the average of all interviewees whereas consumer representatives and the sciences were on average one level higher. Consumers and industry vary, however, in their estimation of where there is a need for priority action.

The biggest need for action is seen in conjunction with toys, textiles and furniture. The reasons given were mainly proximity to the body (textiles), the sensitivity of the target group (toys) and long exposure (furniture), always linked to the inadequate provision of information for consumers.

The need for action was deemed to be lowest in the case of cosmetics because this area has the most extensive provisions and communication. The same applied to pesticides because of their relatively minor importance, aside for instance for gardening work. The largest spread was found in the answers in the area "cars" where the estimates varied between very high

and very low. Other areas requiring action which were mentioned once were foods and packaging.

G) Target groups

In conjunction with the unprompted questions, target groups requiring special action were mentioned (cf. Table 4; several responses were possible).

Parents, vulnerable individuals and young people were the most frequently mentioned specific target groups. Five of the interviewees did not identify any special groups as target groups.

Figure 11: In which product areas do you see a need for improvement?

Product area	Very high	High	Mod-erate	Little	Very little	Not at all	No information
Cosmetics/body care products		C	A S	I			0
Paints/varnishes		C	A S	I			0
Textiles		A S C		I			0
Consumer, information and communication electronics		S C	A	I			1
Motor vehicles		C	A S	I			2
Toys		A S C	I				0
Furniture		A S C	I				0
Household cleaning products		C	A S	I			0
Pesticides*			A C+S	I			2
Biocides*		C+S	A	I			2
Food additives*		S	A C	I			

*not covered by REACH

Table 4: Target groups mentioned with a high need for action

Target group	Number mentions
Parents: contacts for the sale of children's products: toys, clothing	5
Vulnerable groups: allergy sufferers, people with multiple chemical sensitivity (MCS), sick or older people	4
Young people: highly susceptible target group of importance for the future	3
Foreign citizens: any language obstacles	2
Women: consumers of cosmetics	1
People with a low level of education: probably more difficult to reach via information offerings	1
Multipliers and representatives	1
None, all	5

H) Previous information components and their importance

The greatest importance for consumer information is attributed to hazard symbols on the products and to product test magazines, followed by product labels. The reasons given for the importance of hazard symbols and labels are in particular their direct placement on the product and the mostly clear statements whilst the good reputation of and the degree of familiarity with the product test magazines were stressed. The least importance is attributed to safety data sheets, databases and further training as they only reach very small numbers of consumers or are not easy to understand (safety data sheets, most databases). Also the foundations laid through general school education in the natural sciences were deemed to be of minor importance because the basic knowledge imparted was not sufficient.[4]

The arguments advanced by the interviewees for the most important and least important information components in their view are compiled in Table 5. Overall, there is an emerging trend that thee components, which are closer to the product, are ranked as more important. They can, therefore, be accessed in the purchasing situation and are also easy to understand. The industry representatives (I) tend to view instruments of this kind as more important than the representatives of science and consumer associations. In-depth background information was only given a high ranking if it is generally understandable, up-to-date and highly trustworthy (e.g. test magazines). Future information strategies should also build on this basis even when they use new components.

[4] This view is frequently expressed in the field of risk communication but it has not yet been scientifically validated. General statements about the education level of the population in respect of the natural sciences should, therefore, be treated with caution.

Figure 12: What importance have the following information components had for "the" consumers up to now (in relation to risk communication on chemicals)

	Very high	High	Moderate	Little	Very little	None at all
Hazard symbols [7]		A I C S				
Product test magazines		A S+C I				
Product label [1]		A S+C	I			
Safety and risk phrases ("S and R phrases")		I	A C+S			
Vocational training [5]		I	A S+C			
General education [6]			I	A C S		
Databases on the Internet				A S+C	I	
Further training [4]				A C	S+I	
Data sheets [2]					A S+C+I	
Other: (Number of mentions)	Consumer advice (3), Product descriptions in brochures (2), Peer groups (2), Media (1)					

[1] e.g. Blauer Engel, Emicode
[2] Prior safety data sheets of the manufacturers, technical instructions
[3] e.g. the former Chemical information system for consumer-relevant substances (CIVS) of BgVV
[4] e.g. evening classes: shopping guides
[5] with a link to chemistry, biology, medicine, environment
[6] Chemistry/biology/physics lessons, natural phenomena/sciences
[7] according to the Dangerous Substances Ordinance

Table 5: Reasons given for the information components ranked most important/least important

Information component	Reasons if ranked as **most important** information component	Reasons, if ranked as **least important** component
Hazard symbols	• Simple • To the point • Conspicuous (for instance because of colour) • Most relevant • Well known (in some cases only grasped importance superficially) • Accessible at place of purchase	• So far only for the most dangerous products
Safety and risk instructions ("S and R phrases")	• Brief and succinct • Directly on the product/packaging	• Consumer can't do anything with this
Product label	• Provided for consumers • Most important during purchase because placed directly on the product (not time-consuming) • Brief and succinct • Clear	• There are too many labels and this overtaxes the customers
Data sheets		• Designed for specialists, too complex for customers • Only known to specialists • Is not asked for • Customers don't come into contact with this
Databases on the Internet		• Too complex, difficult to understand • Not intended for laypersons • Scarcely known • Difficult to find
Product test magazines	• Assessment of ingredients in products by test magazines becoming increasingly important • Known to consumers • Have very good reputation	• Not yet widespread enough
Further training		• Only very few people use this (e.g. during retraining)
Vocational training		• Only concerns a small part of the population
General education		• Because of general weakness in the natural sciences • Not enough time in school • Topic is overly specific

I) Extension of and need to introduce information modules

One question also asked which of the existing information components should be further extended or developed or which new information paths should be established (cf. Fig. 13). Comparatively speaking, easily accessible information sheets for consumers (see more on this further below) and clearly improved, general school education on chemistry/health were mentioned as the most important. The need for lost ground to be made up in general education was the question that was rated as being the least controversial subject by the interviewees. The importance of this basic knowledge was stressed as this would mean that all further information strategies could be placed on a better foundation.

The extension of the product labelling system and the targeted offering of databases on the Internet were deemed to be only slightly less important than the previously mentioned points.

In both cases the consumer and science representatives were more committed to these tools whereas industry representatives were more sceptical given the wealth of labels already in use or they referred to information on the Internet, mainly on the manufacturers' websites. Product labels and Internet databases are examined in more depth later on. The health aspects of vocational training covering areas like chemistry, biology, medicine and the environment should also be improved.

A basic book for consumers on this subject and the introduction of a REACH label as a new label were deemed to be the least important. The main argument advanced for the rating of the book was a lack of interest amongst the public at large and the lack of topicality of a book of this kind. The large number of existing labels was the argument advanced against a new label as there was a risk that it would cause confusion. Another argument was that when it comes to complying with statutory provisions a label alone would not provide any additional information for consumers and could not, therefore, influence the purchasing decision (cf. also Annex J).

In-depth questions on labels and labelling

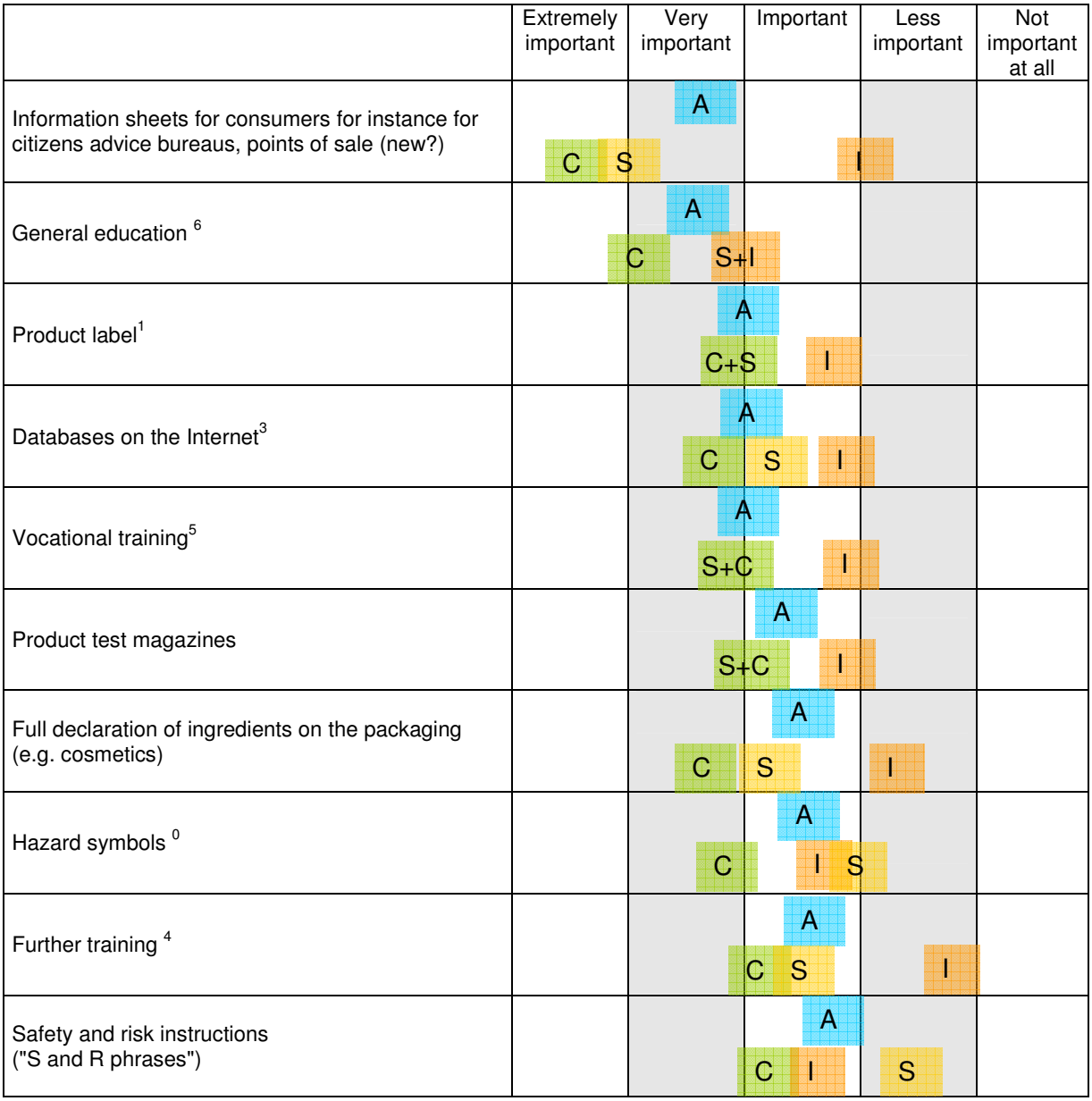
J) Introduction of a "REACH label"?

Whereas consumers and industry representatives tended to be against a label which certified compliance with the REACH provisions, the science representatives were divided (cf. Fig. 14). The arguments advanced for the introduction of a REACH label were that

- it would take a considerable amount of time. This would mean that those products would be at an advantage on the market whose relevant substances met the conditions more quickly and could document this on the label. This could trigger competition between the companies which would speed up the implementation process.
- REACH registrations only apply to substances and preparations but not to products. Hence labelling of the products would make sense.
- the voluntary undertaking on communication with customers is strengthened and, by extension, the pressure is raised on manufacturers to pay more attention to compliance.
- in this way cheap imports would encounter more difficulties in the EU as the manufacturers/importers would have to assume more responsibility when they officially confirm registration in accordance with REACH in their communications for the imported parts, too.
- it makes sense when it points out that a substance requiring authorisation pursuant to REACH is contained in the product.
- The arguments advanced against labelling/a REACH label were that
- there were already very many labels and there was a risk that an additional label would cause confusion.
- REACH is almost unknown amongst the public at large and customers don't know what it stands for (or the efforts needed to explain this would be huge, cf. the information campaigns on the introduction of the "BIO label" by BMELV – Federal Ministry of Food, Agriculture and Consumer Protection).
- under REACH only some substances have to be registered and a REACH label would possibly convey an unjustified feeling of safety.
- the recording of substances under REACH cannot generally be equated with a "safety certificate" which means that a label of this kind could be misinterpreted by consumers.

- when it comes to complying with statutory provisions a label alone would not provide any additional information for consumers and would not influence purchasing decisions,
- labels should not be issued "in an instrument-oriented manner" (as is the case for the instrument "REACH") at least as long as the instruments are not primarily consumer-oriented.
- far too much red tape would be involved for the provision of too little or no additional information.

Figure 13: Which of the following information components should be extended (introduced):



Continuation Figure 13: Which of the following information modules should be extended (introduced)

	Extremely important	Very important	Important	Less important	Not important at all
Safety data sheets [2]		C	A S	I	
REACH label			A S C	I	
Book			A C	S+I	
Other (Number of responses)	Advice (2) Media (1) To be taken into account: peer groups (1)				

[0]Pursuant to the Dangerous Substances Ordinance, [1] e.g. Blauer Engel, Emicode, [2] previous safety data sheets of the manufacturers, technical instructions; [3] e.g. the former Chemical information system for consumer-relevant substances (CIVS) of BgVV; [4] e.g. evening school classes: shopping guides; [5] with a link to chemistry, biology, medicine, environment; [6] Chemistry/biology/physics lessons, natural phenomena/sciences

Figure 14: Do you believe that the introduction of a "REACH-compatible" label would be a good thing for consumers ("REACH label")?

Yes	Probably	Yes and no	Probably not	No
	S	A	C I	

No information: 2

K) Should the "Blauer Engel" (Blue Angel) system be extended?

The average response was that the “Blauer Engel” should be used even more to communicate the health aspects of chemicals as it is already an established label for various criteria (cf. Fig. 15).

Figure 15: Do you believe that the extension of the "Blauer Engel" system would be helpful with a view to the health hazards and chemicals in public products?

Yes	Probably	Yes and no	Probably not	No
	C A S	I		

No information: 0

Arguments in favour:

- The “Blauer Engel” already has some health criteria which means that it does not really need any new orientation but can build on what is already there. The fact that it contains criteria of this kind would perhaps have to be communicated more clearly. This label would then become more relevant from the angle of purchasing decisions and not just from the angle of environmental protection.
- Alternatively, the system could be varied by adding instance "red angels", "green angels" for other criteria but still keep to the well known fundamental component of the "angel label".
- The “Blauer Engel” is already comparatively well known as a recognised and trusted label ("gives a feeling of safety and a good feeling“).
- No completely new label would be needed which would have to be introduced at great expense over a longer period of time which, in the worst case scenario, would merely confuse consumers in the face of the ever growing number of labels.
- The “Blauer Engel” would always have a different function from the "REACH label" because of differing criteria which means it could not be seen as an alternative but as a supplement if a REACH label were to be introduced.
- More consideration should be given to the link to the performance or the properties of a product in order to compare like with like.

Arguments against:

- Up to now, the “Blauer Engel” has only been known to and helpful for selected target groups and hasn't been accepted across the board for all customers.
- The “Blauer Engel” was already an overloaded label with too many criteria. A further extension and even greater consideration of health aspects would make the issuing procedure too complex and the message even less clear.

For industry representatives it was important that this label system is kept on a voluntary basis and that manufacturers should not be forced to participate. Several of the interviewees generally remarked that, besides the many opportunities offered by good and simple labelling systems, there was a basic danger of being diverted away from the influence of consumer behaviour and overly focusing on risks when handling the substance. Efforts should always be made to communicate this in parallel to the label. More concrete proposals were not, however, submitted.

L) Opportunities and risks from the new "Globally Harmonized System of Classification and Labelling of Chemicals" (GHS)

The Globally Harmonised System of Classification and Labelling of Chemicals should be introduced in Europe in parallel to REACH. Only half of the interviewees were so familiar with the forthcoming GHS that they felt comfortable making comments on the opportunities and risks (without any prompting). Those interviewees then welcomed standardisation as desirable and advantageous.

The following comments were, however, made concerning the handling of the system and communication on the transitional phase:

Similar to REACH, the symbols stipulated in GHS aim to optimise communication along the value added chain down to the end product so that the transport of relatively large volumes of a substance could be clearly labelled. Hence, the system initially covers the area of occu-

pational health and safety. The labels are not, therefore, primarily intended for communication with the end customers because, for instance, the hazards mentioned in the GHS are no longer relevant at small volumes. Hence, mentioning these changes in communication with consumers would be rather disadvantageous.

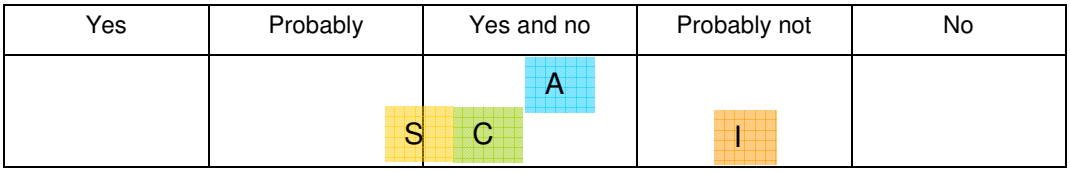
Industry representatives were of the opinion that GHS will lead to changes in labelling provisions which could cause confusion. For instance, more products would have to bear the "corrosive" symbol because the labelling threshold had been raised. This could lead to a washing-up liquid having to be labelled as corrosive in the same way as a pipe cleaner. That is not helpful for consumers. A comparable product could appear with a labelling obligation to carry the "Skull and crossbones".

The changes concerning communication for consumers should be assessed after submission of the final draft of the GHS Ordinance.

M) Full declaration on products?

Whereas industry representatives clearly tended towards a full declaration of ingredients on the products, several representatives of the sciences and consumers were in favour of a differentiated “full declaration”.

Figure 16: Do you believe a full declaration is necessary for products containing substances declared as dangerous?



No information: 0

Almost all interviewees thought that a *systematic* full declaration on products would not be helpful. The interviewees were against a solution of this kind, amongst other reasons, because

- too much (in some cases irrelevant) information could swamp the really important items.
- only experts (e.g. in citizens advice bureaus) could interpret this information.
- this would cause uncertainty amongst consumers.
- the effort would be immense and the effects questionable.
- many companies now post their product ingredients on their websites and, therefore, the information on the product would no longer be necessary.
- completeness could not be achieved in the case of highly complex products (e.g. motor vehicles)
- that this had largely been done in the case of really problematic product groups like cosmetics and foods and was not necessary for other product groups.

The arguments against an extended declaration obligation were that

- many other information components only made sense when combined with comprehensive declarations (e.g. information sheets and Internet information on substances).
- consumer trust grows through the certainty of purchasing a safe product.
- the information should be directly placed on the product in order to give for instance sensitive consumers, like allergy sufferers, direct access if possible direct because this is the only way of integrating this into the purchasing decision.

The following proposals were made to extend or differentiate the "full declaration":

- It is enough to give a full declaration of substances classified as dangerous or substances with indications of health hazards. This would also motivate companies not to use these substances.
- Even in the case of a full declaration there would, of course, have to be a separate listing of warnings. Amongst other things this would indicate that "many substances" do not automatically mean a "more dangerous product".
- The full information should be posted on the Internet rather than on the product or in additional product information sheets available in the shop in order to give particularly interested consumers access without other consumers perhaps being overloaded with too much information. Furthermore, directly integrated depictions would be possible which not only contain the less informative substance names but the more important evaluations and assessments of the substances.
- The full listing would only make sense in conjunction with comprehensible and complete information on the safe handling of the product.

In-depth questions on information sheets

N) Are information sheets desirable and practicable?
and
Q) Substance or product reference in the information sheets?

The initial question was whether the interviewees felt that it would be desirable from the consumer perspective for information sheets to be drawn up and made available in the shops which would provide information in a comprehensible manner on the hazards, risks and correct handling *of a specific substance*.

There was an overriding feeling of scepticism about presenting important information in a *substance-based* manner. The customers would "think in terms of the product" and would, therefore, prefer product-related information. Substance-related information sheets would only make sense if the declaration of substances could be found on the products. In order to avoid information overload and to maintain practicability in the shops, this would have to be restricted to substances classified as dangerous or health relevant.

Figure 17: Do you think that the introduction of substance-based information sheets providing information on hazards/risks (in the shops) is

a) ... **desirable** from the consumer angle

Yes	Probably	Yes and no	Probably not	No
	C	A S	I	

No information: 0

b):... **practicable**
(when restricted to health-relevant substances or dangerous substances)

Yes	Probably	Yes and no	Probably not	No
	C S	A	I	

No information: 1

Hence, in the majority of the interviews, the approach of *product or product group-related* information sheets was developed further. Product group-based information sheets are already available for instance for paints and varnishes in DIY stores which mostly contain information on how to use the products. This is where additional information could be added on health aspects or about product groups.

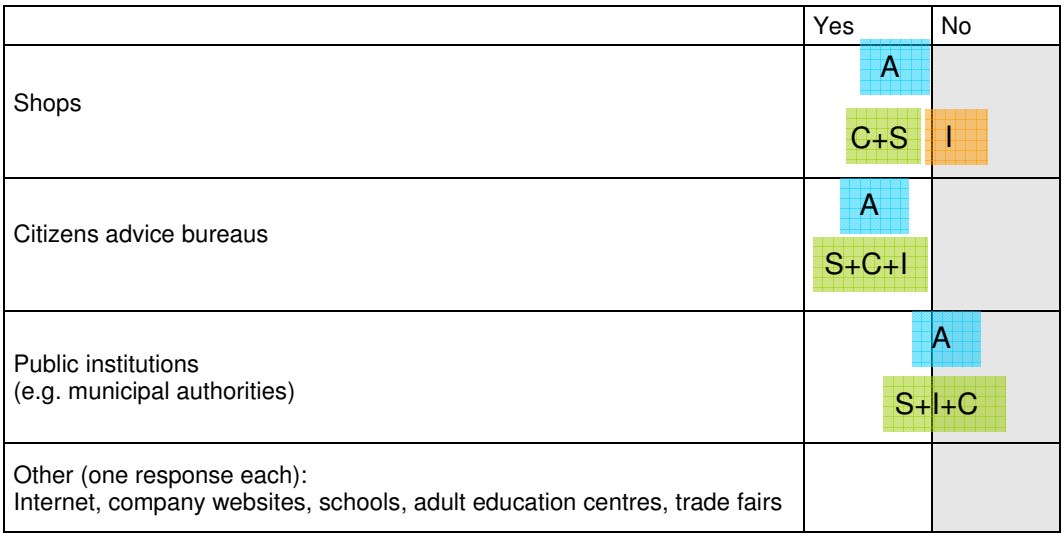
O) Positioning of information sheets

Those interviewees who were in favour of information sheets advocated at least making them available in citizens advice bureaus although a large number of the interviewees also thought that making them available in shops would be desirable and practicable. The need to make the information sheets available in public institutions, too, was rated far lower. Furthermore schools, adult education centres and trade fairs were thought to be suitable locations where these sheets could play a role. The opportunities to link information sheets with Internet offerings are discussed further below (Fig. 18).

P) Scope of information sheets

The scope of information sheets should be kept to a minimum. In most cases one or two pages was thought to be the maximum. The consumer and scientific representatives were in favour of two pages, the manufacturers of one page.

Figure 18: Where should information sheets be made available?



R) What information should be contained in these sheets?

The following table contains the information proposed for inclusion in the information sheets. In several cases it was stressed that the sheets should be well structured and formulated in comprehensive, simple language.

Table 6: Proposed contents for information sheets (unprompted question)

Content	Number of responses
Dangerous substances, allergens and their concentration	4
Possible known hazards and risks (beyond hazard symbols)	4
Instructions for use	4
Other sources of information	2
Environmental aspects	1
Interaction with other products	1

S) For which product areas should information sheets be introduced first?

The greatest need for the introduction of information sheets was seen for textiles and toys. This correlates with the general priorities for the product areas (cf. Question F). Cosmetics were mentioned in third place and were deemed to be not so important in the general assessment of the need for action.

Table 7: Proposed priority product areas for the drawing up of information sheets (unprompted question)

Content	Number of responses
Textiles	7
Toys	5
Cosmetics	3
Household cleaning agents	2
Furniture, information and communication electronics, food, food additives, food packaging, construction chemicals, paints, varnishes, lamp oil, biocide-containing products	1 x each
No information	2

In-depth questions on a public information system on the Internet

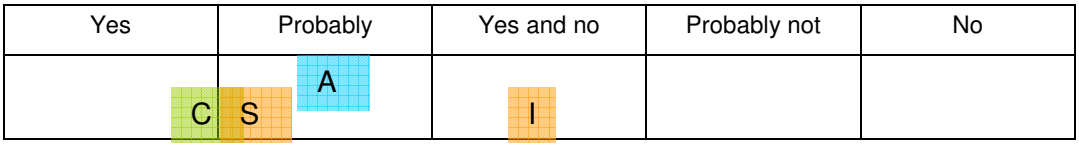
T) Internet information system desirable and practicable?

The next section of the questionnaire contained questions about setting up a comprehensible information system on the Internet. Most of the interviewees were of the opinion that an information system of this kind was desirable (see Fig. 19). Scepticism was voiced mainly by industry representatives who pointed out that comprehensive information is already available on the manufacturers' websites. Regarding practicability the considerable expenditure and time needed to set up and maintain a system of this kind should be weighted up against the benefits. Furthermore, the information would not be available in the shop where the purchase decision was made. Hence, the most important information would have to be placed on the product and could not be replaced by information on the Internet.

The supporters stressed that an Internet information system should be up to date in order to offer varying levels of information to highly interested groups in the population and multipliers (e.g. citizens advice bureaus, schools). The important conditions for the acceptance of a system of this kind were listed. It should be up-to-date, tested and impartial and there should be a transparent procedure for evaluating the substance/product (groups) described there. Consumer and science representatives believed that a system of this kind was viable; industry representatives were very sceptical.

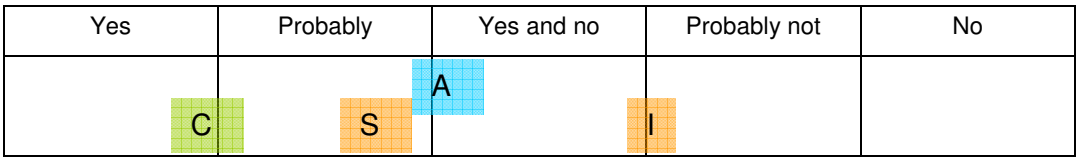
Figure 19: Do you believe that a public information system on the Internet for consumers is

a) ... **desirable** from the consumer angle



No information: 0

b) ... practicable



No information: 0

Furthermore, there were also proposals on how to link an Internet information system of this kind with other information components. For instance, the information sheets could also be available for downloading on the Internet. In the medium and long-term it would be conceivable to assign numbers to specific product groups and to indicate them on the labels. This would mean that the relevant information could be sourced more quickly on the Internet. Furthermore, integration into or a very close link with existing known websites was important to facilitate access. Mention was made for instance of "label online", Stiftung Warentest and Öko-Test.

Furthermore, in the interviews further comments were also made about an introduction strategy. The development of a database of this kind should be done together with the consumers and communication experts. Initially work should begin with individual product groups and a gradual roll-out envisaged.

V) Who should set up and maintain a system of this kind?

The answers to this question revealed the following picture (cf. Table 8): the main emphasis was placed on state or impartial offices. Industry and manufacturers were also mentioned several times as possible organisers. Otherwise the European Chemicals Agency in Helsinki, the Stiftung Warentest and "the sciences" were each mentioned once.

Three interviewees recommended that industry fund this system but that it be monitored by an impartial body. The involvement of consumer institutions (for instance vzbv) was mentioned twice.

Table 8: Proposed organisers of the information system on the Internet (unprompted question, multiple responses possible)

Content	Number of mentions
State offices (e.g. BfR* and/or UBA**)	6
Impartial office	3
Industry, manufacturers	3
European Chemicals Agency in Helsinki, Stiftung Warentest, sciences	1 x each
Decentralised, no public authority	1
No information	0

*Federal Insitute for Risk Assessment ** Federal Environmental Agency

W) Substance or product-based information system?

Most interviewees were in favour of product/product group-based reference to the information as consumers initially oriented themselves towards that. Furthermore, the information should also be presented in a substance-based manner and easy to find. The strengths of deüiction on the Internet could be tapped into as it permits different access pathways.

X) What information should be contained in the Internet information system? and U) On what database should the information build?

In response to this question it was mentioned several times that a comprehensive depiction would, in principle, be desirable but however with varying levels of intensity and in a structured manner. On the initial access level, however, a few pieces of important information should be given, comparable to the contents proposed for the information sheets (cf. Table 6).

The vast majority of interviewees were unable to make any comments about the databases on which an information system of this kind should build. Six people mentioned the database to be set up by the European Chemicals Agency in Helsinki as one of the most important data sources.

Y) For which product areas should work commence on building up an Internet information system of this kind?

In this context the interviewees referred to the answers to question S (see page 34).

Opportunities and risks through REACH

Initially, REACH will only have an indirect impact on communication between manufacturers and/or retail distributors and consumers unless a REACH label is introduced. Nevertheless, the changed information situation in the production chain will have an effect on the data available for consumer communication. Hence, questions were asked about the impact of the proposal for the REACH Regulation (as at 27 September 2006) at the time of the interview.

Generally speaking, the chances that REACH will have a positive effect on the trustworthiness of information, data accessibility, up-to-dateness etc. are estimated to be far higher than the risks (cf. Fig. 20).

The main reasons given for this positive assessment are: in many cases assessments will be available for substances; overall far more information will be available on substances; the authorisation procedure will ensure greater trust and prevention. The constraint mentioned three times was that these estimates only initially apply to substances and products produced within the EU but that the situation for imported products could, however, be completely different.

Concerning the comprehensibility of the information for consumers REACH is seen to offer the smallest opportunity and the biggest risk. This is explained by the fact that the information initially will probably be in English in the chemicals database in Helsinki and will be probably be couched in the technical jargon of experts. The translation of the wealth of information for consumers is not guaranteed through REACH alone. Further instruments would have to be used as already mentioned in this report.

Whereas the representatives of science, in comparison to the other groups interviewed, almost all gave the highest rating to the opportunities presented by REACH, the industry representatives all rated them the lowest. When assessing the risks, the consumers representatives were frequently at the top.

Figure 20: What opportunities and risks do you see through REACH for improving consumer information on consumer health protection using the following criteria:

Opportunities	Very considerable	Considerable	Average	Small	Very small	No information
Trustworthiness		A C+S+I				1
Data accessibility		S	A C+I			
Up-to-dateness		S+C	A I			1
Risk avoidance		S	A C+I			1
Transparency			A S+C I			
Comprehensibility			A C	S+I		1
Risks	Very big	Big	Average	Small	Very small	No information
Comprehensibility			A C I+S			3
Up-to-dateness			A C I	S		3
Risk avoidance			A C	I+S		3
Transparency				A I+S+C		3
Trustworthiness				A S+C I		4
Data accessibility				A C+S I		*3*

Separate communication approach for imported products?

Finally, the interviewees were asked whether they see a need for a communication approach which reflects the fact that many of the products imported into the EU could be less well tested than products produced exclusively in the EU. Eight out of fourteen interviewees answered this question in the affirmative and made suggestions about how this could be reflected in consumer communication.

For instance, reference could be made in consumer advice to the information sheets mentioned above, and integrated into brochures or PR campaigns which highlight this problem. To allow consumers to take this into account when making a purchase decision, clear labelling is necessary like for instance a REACH label or the wording “Made in the EU”. Furthermore, the topic could also be taken over into communication about fair trade or companies’ corporate social responsibility activities. However it was difficult to justify a communication approach which generally called for consumers to purchase products manufactured in the EU. For that the framework conditions were far too different from case to case. One interviewee suggested that the REACH system could be extended globally to solve this problem.

2.4.2 Conclusions of the survey

Initial theories

It is mostly assumed that the previous information policy on the health aspects of chemicals is not sufficient. Strategies for building on an information policy would have to bear in mind that, in the opinion of the interviewees, up to now only a minority of consumers could be deemed to be "capable of judging the risk"[5]. Against this backdrop the interviewees were of the opinion that a large proportion of the population would rather not decide for themselves whether a product entails chemical risks for them and would prefer the state to take this decision for them.

Representatives of consumers and the sciences recommended a more proactive information strategy based on this which, however, need not necessarily increase the quantity of information but rather promote a targeted approach.

Need for action

Based on this estimation, representatives of consumers and science advocate a more proactive information strategy which should not necessarily increase the amount of information but should promote for a more targeted approach.

A need for improvement in communication was mainly seen for the product groups toys, furniture and textiles. Parents, vulnerable groups in the population (e.g. older citizens, allergy sufferers) and young people were named as the main target groups.

When asked about the importance of existing information components, hazard symbols on products and product test magazines were mentioned first followed by product labels. The reasons given for the importance of the hazard symbols and labels were in particular their positioning directly on the product and mostly clear statements whilst the good reputation and the degree of familiarity with product test magazines were stressed as important.

In response to the question about which information components should be extended or developed, easily accessible information sheets for consumers, major improvements to general

[5] Similar to the statements about the scientific literacy of the population, this is an opinion which is frequently voiced by the interviewees which has neither been scientifically validated nor refuted up to now. Furthermore, this raises the question about how to measure the capability to judge risks.

chemistry/health education, databases on the Internet and label systems on the products were rated as the most important.

Information on the product
The possible introduction of a "REACH-compatible" label was largely received in a sceptical manner. There was more support for various further developments of the “Blauer Engel” (e.g. for other products, far greater emphasis on health protection criteria). The systematic full declaration of ingredients on the products was not deemed to be helpful. A differentiated extension of the declaration obligation would be more likely to supply consumers in a targeted manner with information and offer them, where appropriate, more in-depth information.

Information in the shop or other (advice) locations
The introduction of information sheets which provide information *on a specific substance* about hazards, risks, handling instructions etc. was not recommended by the majority of interviewees. If, however, information sheets of this kind were available for specific *product or product groups* in shops or citizens advice bureaus and contained short, precise and important information, this could constitute a major aid for many consumers. This was the opinion of many interviewees.

Information system on the Internet
Most of the interviewees welcomed the idea of an information system on the Internet. The supporters stressed that an Internet information system of this kind would be up-to-date and offer very interested groups in the population and multipliers varying levels of information (e.g. citizens advice, schools). The important conditions listed for the acceptance of a system of this kind was that it should be up-to-date, tested and compiled in line with uniform criteria. It should be "impartial" and there should be a transparent procedure for the evaluation of the substances/product (groups) described there. Representatives of consumers and science were of the opinion that a system of this kind would be practicable whereas industry representatives were very sceptical.

Opportunities and risks through REACH
Generally speaking, the chances that REACH would have a positive impact on the trustworthiness of information, data accessibility, up-to-dateness were estimated to be on average higher than the risks. Concerning the comprehensibility of the information for consumers, REACH is deemed to offer the smallest opportunity and the biggest risk. This is explained by the fact that the information will probably be available in English in the chemicals database in Helsinki and will probably be couched in the technical jargon of the experts. The translation of the wealth of information for consumers is not guaranteed through REACH alone. Further instruments would have to be used as already discussed in this survey.

The response to the question whether the greater uncertainty concerning the quality of information for substances and products largely produced outside the EU in consumer communication should be communicated, did not produce a clear picture. Around half of the interviewees advocated this and mentioned management approaches. For instance reference could be made for this in the citizens advice, could be integrated into the information sheets described above, into brochures or public relation campaigns which highlight this problem.

2.5 Differentiation of target groups

In principle consumers are a heterogeneous target group which means that they cannot be viewed as one community. Not only their previous knowledge, assessments and interests but also their vulnerability and hence the degree to which they are affected by the topic "health hazards through chemicals" vary too much. Depending on the message and the subject to be communicated, the existing (consumer) typologies should be taken into account to a greater degree in future when developing a communication strategy. This applies all the more since the information to be communicated must stand out from the flood of messages on the market if it is to be perceived at all.

When it comes to chemicals in products, the subject and the target groups concerned are so broad that it is not possible to formulate detailed strategies for all topics and target groups in this study. However, important key data can be derived which are taken into account further below in the recommendations and are, therefore, mentioned here. They include at least the following differentiations:

a) "People with a peripheral or central interest",

b) Consideration of differing prior knowledge,

c) Distinction between other specific groups in the population (children, parents, older people, foreign citizens).

A) People with a peripheral versus central interest

Renn and Kastenholz (2000) describe how findings from psychological research on persuasions can be used for risk communication.

People with a peripheral interest in the subject tend to expect easily understandable key information which permits them to rapidly orient themselves. People with a central interest in the topic tend to look for information on the pros and cons in order to have a broad foundation for the decisions to be taken.

A well-structured information strategy, therefore, offers information to both target groups. On the one hand it must contain enough core messages for people with a peripheral interest in order to encourage them to seek more comprehensive and in-depth information. On the other hand it must contain enough unbiased detailed information in order to appeal to people with a central interest. The difficulty in practice is how to combine this in such a manner that the people with a central interest are not put off by the simple, somewhat superficial messages and the people with a peripheral interest are not intimidated by such a wealth of information.

B) Consideration of different prior knowledge

It has been common knowledge, not just since the findings of the "PISA studies", that the level of knowledge amongst the population particularly concerning scientific literacy varies considerably. However, this basic knowledge is needed if people are to be capable of judging risks in the areas of health and chemicals, one of the desirable premises for risk communication (cf. for instance Hertel and Henseler 2005, p.87). The assumption was also repeatedly expressed during the interviews that there were huge gaps particularly in the field of scientific literacy which cannot be compensated for by a communication strategy on the health hazards from chemicals. However, it can in fact be assumed that there are varying levels of knowledge in the population which must be taken into account when developing communication strategies. However the statements made so far are still overly general and should be confirmed through studies or findings in the field of scientific literacy.

C) Distinction between other specific groups in the population (young people, parents, foreign or older citizens)

Differentiation is particularly helpful when it comes to addressing people with a more peripheral interest. It is easier to reach this group through highly targeted, easily comprehensible and, in some cases, slightly emotional core messages rather than through impartial messages. For instance it will be easier to get parents to consider the risks from chemicals in toys when the relevance for the health of their children is highlighted. Or a more youthful language is already used in headings in information material when there is a desire to raise awareness amongst young people about chemicals in clothing.

Furthermore, suggestions were also made in the expert interviews about the best way of addressing these groups in the population. These proposals should be carefully examined against the backdrop of findings from the communication sciences.

The conclusion presented here is that a graduated strategy with various information components for various target groups is needed.

This is already reflected in the existing components. For instance the risk warnings on products are an opportunity for people with a peripheral interest to rapidly access core information, too. Product test magazines also offer people with a central interest more differentiated, in-depth information. More systematic consideration is recommended during the development and optimisation of existing strategies and is included in the recommendations outlined below.

2.6 Summary

It is assumed that up to now only a small proportion of the population has sufficient prior knowledge or is sufficiently interested in order to actively process information in an in-depth manner on the topic dealt with here. Hence there is still a need for a precautionary chemical and product policy by means of which many of the existing risks could be minimised through other instruments rather than exclusive information for consumers. In this context REACH can also make an important contribution. Nevertheless, consumer communication beyond the existing risks plays an important role as its gives consumers decision-making aids when purchasing products as well as providing information on the low risk handling of products.

Even before the introduction of REACH various information components were available which provided consumers with relevant information on the health aspects of chemicals in products. Depending on the product group they include hazard symbols, product labels, wording on the packaging, product test magazines and consumer advice. Even if the majority of the population believes it is unlikely that their health will be damaged by products (cf. Fig. 2), there is nevertheless a desire to obtain or be able to obtain further information. The majority of experts interviewed, too, also believe that the information offering is not sufficient.

Representatives of consumers and the sciences advise a more proactive information strategy where the quantity of information need not necessarily be increased but rather a targeted approach adopted. It was mainly industry representatives who feared that more information could be excessive and lead to a feeling of uncertainty.

There was a need to improve communication particularly on the product groups toys, furniture and textiles as they either concern the particularly sensitive group of children, lead to frequent or direct skin exposure or not enough attention has been paid to them. For other

product groups with similar characteristics like, for instance, cosmetics or household cleaning products, the majority view is that there is an urgent need for more information.

Based on the assumption that there are differing levels of information and interest in the population, that different groups are affected and that the hazard potential varies depending on the substances contained in the product, there must also be a graduated information offering for consumers in the future. Generally speaking, the diverse combinations of information which can already be found in numerous situations are to be extended further. The most important information is to be placed directly on the product/packaging, i.e. if possible close to the point of sale, and more extensive information is to be provided as fetch information for instance in test magazines, on the Internet etc.

In response to the question about which existing information modules are of the greatest importance, the experts mentioned hazard symbols on the products and product test magazines in first place followed by product labels. The main reasons given for the importance of the hazard symbols and labels were above all the direct positioning on the product and the normally clear statements whereas the good reputation and degree of familiarity of the product test magazines were stressed as important. Both the expert survey as well as information in the literature revealed that priority should be given to developing the following information components:

- easily accessible information sheets for consumers,
- databases on the Internet and
- label systems on the products.

Further concrete recommendations are made in this respect in this study which are summed up in Chapter 4.

Parents were mentioned by the experts as the most important target group because of their protective function for smaller children. They also mentioned vulnerable groups in the population (e.g. older citizens, allergy sufferers) and young people as consumer groups whose awareness should be raised in the future.

Opportunities and risks through REACH

In principle, the interviewees rated the chances that REACH would have a positive impact on the trustworthiness of information, data accessibility, the up-to-dateness of data and information were estimated to be on average higher than the risks associated with REACH. Concerning the comprehensibility of the information for consumers, REACH is deemed to offer the smallest opportunity and, at the same time, the highest risk for improvement. This is explained by the fact that the information will probably be available in English in the chemicals database in Helsinki and will probably be couched in the technical jargon of the experts. The translation of the wealth of information for consumers is not guaranteed through REACH alone. Further steps would have to be taken to integrate other information components.

The response to the question whether the greater uncertainty concerning the quality of information for substances and products largely produced outside the EU in consumer communication should be communicated, did not produce a clear picture. Around half of the interviewees advocated this and mentioned management approaches. For instance reference could be made to this in citizens advice, could be integrated into the information sheets described above, into brochures or public relation campaigns which highlight this problem.

3 Analysis of risk communication in the USA, Japan and Spain[6]

Risk communication approaches vary from country to country for historical, cultural and economic reasons. A careful analysis of the approaches and evaluation of experiences can provide valuable support for conceptual and instrumental implementation and further development of risk communication in Germany. The United States, Japan and Spain were selected as the countries for an in-depth, comparative examination.

The United States are the largest manufacturer in the world of chemical substances. At the same time, the US American chemical industry has a higher productivity in the areas of research and development (R+D) than EU companies. In the USA there was a demand far earlier in than in Europe for transparency in the declaration of consumer products and data on the amounts of chemicals used and emitted e.g. through the Toxics Release Inventory (TRI). For the purposes of sourcing data on substance assessment for the public at large, the USA adopted a different information policy (e.g. *Agency for Toxic Substances and Disease Registry – ATSDR,* US Department of Health and Human Services; *Integrated Risk Information System – IRIS,* US Environmental Protection Agency (EPA)). Hence, a large number of easily comprehensible substance assessments are available from ATSDR. In parallel to this, the IRIS data have been in the public domain for years.

The industrial nation, Japan, is the second biggest manufacturer of chemicals in the world. Furthermore, Japan - alongside Germany and the USA - plays a leading role in the ICCA Initiative on the OECD-HPV chemicals programme which has set itself the goal of analysing 1000 high tonnage chemicals within the next five years around the world. Japan processes a large number of these substances.

Compared with the USA, Japan and Germany, Spain is a comparatively small producer of chemicals. Major economic growth in recent years has raised awareness of consumer topics.

3.1 Risk communication in the USA

3.1.1 Statutory foundations for information on chemicals in consumer products

On the federal level in the USA the chemical provisions are set out in the *Toxic Substances Control Act (TSCA)* which was adopted for the first time in 1976. Furthermore, on the federal state and regional level there are numerous different statutory regulations on protecting the public from dangerous substances. Hence there are no uniform provisions in the USA (Lahl/Tickner, 2005).

The TSCA requirements to be met by product labelling are set out in Section 6(a)3 of TSCA for existing chemicals and in Section 5(e) for new chemicals. The American Environmental Protection Agency (EPA) has not adopted any uniform provisions for labelling so far; a decision is taken on a case-by-case basis for substances. In the standard setting out the provisions for significant new applications of chemical substances (40CFR721), the labelling is roughly comparable to that in German chemicals legislation. For preparations used at the workplace, too, internationally comparable communication standards are in place (OSHA, 1994). For instance a content of less than 0.1 % of a carcinogenic substance in a preparation does not require labelling.

[6] The preconditions for optimum processing are in-depth knowledge of the local situation and the language. Therefore IFEU worked together with proven co-operation partners who can draw on many years experience in this field and with whom IFEU engages in close co-operation in the form of joint projects and an ongoing exchange of information.

The key instrument for information on dangerous substances is safety data sheets which are called *Material Safety Data Sheets (MSDS)* in the USA. The foundation for this is the *Hazard Communication Standard (HCS; 29 CFR 1910.1200)*. The *U.S. Occupational Safety and Health Administration (OSHA)* is responsible for implementation. The goal of the standard is:

> *"to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labelling and other forms of warning, material safety data sheets and employee training."*

A *Material Safety Data Sheet (MSDS)* may contain more information than stipulated in the *Hazard Communication Standard (HCS)* but not less. Other provisions like the *Community Right to Know Act (SARA Title III)* refer to information which may be contained in safety data sheets. In addition, regulations on the federal state, municipal or district level must be taken into account when elaborating safety data sheets as they have adopted specific *Right to Know Acts*.

Similar to European chemicals legislation, safety data sheets are not required for the following groups:

- Articles[7]
- Food, food additives, alcoholic beverages
- Cosmetics sold to consumers
- Pharmaceutics
- Waste
- Untreated wood
- Consumer products
- Office material

No safety data sheet is required for consumer products used in the same packaging as they are sold in and whose use does not lead to any higher risk from exposure than can be expected for the consumer, Responsibility for the safety of consumer products lies with the *Consumer Product Safety Commission* (cf. Chapter 3.1.2).

In practice, however, many companies or retailers are willing to pass on safety data sheets for numerous products to end consumers, too, although they are not obliged to by the statutory provisions. The background is more practical as consumer products may also lead to higher exposures at the workplace than normal. In this case they are bound by law to keep safety data sheets available. This was clarified by the Occupational Safety and Health Administration (OSHA) in an interpretation of the statutory regulation:

> *“Retail distributors who sell hazardous chemicals to employers must provide a MSDS upon request, and must post a sign or otherwise inform employers that an MSDS is available. In other words, an employer purchasing chemicals for his workers to use at his worksite is responsible for asking for the MSDS from the distributor. This must only be done, of course, if those workers will be using the "consumer product" in a manner that results in a duration and frequency of use*

[7] *An "article" means a manufactured item: (1) which is formed to a specific shape or design during manufacture (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (3) which does not release, or otherwise result in exposure to, a hazardous chemical under normal conditions of use.*

> *and therefore exposure greater than would result from normal consumer usage."*[8]

This explains why safety data sheets are available in the USA for a large number of consumer products which are the basis for further information offerings (cf. Chapter 3.1.4). This applies in particular to DIY stores in which preparations are sold to end consumers, tradesmen and other commercial users (e.g. varnishes).

3.1.2 U.S. Consumer Product Safety Commission

The *U.S. Consumer Product Safety Commission (CPSC)* is responsible for protecting consumers from inadmissible health risks from approximately 15,000 different product types (e.g. household appliances, children's toys). The CPSC is not responsible for food, medicinal products, cosmetics, pesticides, medical devices, cars, radioactive substances or technical appliances.

The decisive statutory provisions for CPSC are: the *Consumer Product Safety Act (CPS),* the *Federal Hazardous Substances Act (FHSA),* and the *Poison Prevention Packaging Act (PPPA)* and the *Refrigerator Safety Act (RSA).* The work of CPSC requires a risk assessment of dangerous substances in products on the basis of the FHSA definition according to which a substance is dangerous

> *…if such a substance may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use including reasonably foreseeable ingestion by children.*[9]

Examples for the activities of CPSC concerning dangerous ingredients in consumer products are the:

- Preparation of manuals (e.g. Regulated Products Handbook)
- Preparation of scientific studies (e.g. Hazard Assessment of Butylated Hydroxytoluene from Urethane Carpet Cushions)
- Evaluation of data from Poison Control Centres by the Toxic Exposure Surveillance System (TESS) data concerning consumer products
- Concrete recalls (e.g. of lead-containing metal clip sold with DVDs)
- Preparation of information material for pupils and teachers (e.g. School Chemistry Laboratory Safety Guide)
- Re-examination of appropriate labelling of products (cf. Fig. 21).[10]

Dangerous ingredients are just one, albeit, important criterion. CPSC is most well-known amongst the public at large for the many cases of recalls of toys, normally because of potential physical hazards.

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[8] *Application of the HCS MSDS requirements to distributors selling hazardous chemicals to consumers and employers; 05/16/1990; http://www.ilpi.com/msds/osha/l19900516A.html*

[9] U.S. Congress. Federal Hazardous Substances Act. Public Act 86-613, 15 USC 1261 (f)(1)(A), 1960

[10] Presentation by G. Smith (2005); http://www.cpsc.gov/BUSINFO/pppa/pppa09.pdf

Figure 21: Examination of labelling of consumer products by CPSC

3.1.3 Consumer Labelling Initiative of the US Environmental Protection Agency

In 1996 the American Environmental Protection Agency (EPA) launched its *Consumer Labelling Initiative,* involving representatives of industry, consumer associations and state authorities. The goal was to improve information on the labels of household products with the emphasis on health, safe use and environmental compatibility. Some examples of products that were assessed are: insecticides used indoors, insecticides used outdoors and surface cleaning agents for floors, bathrooms and tiles. The results were documented in two reports from 1996 and 1999[11].

Four two-page brochures from the campaign: *Read The Label First* provide information on four topics for consumers: *Protect your Kids, Protect your Pets, Protect your Garden* und *Protect your Household*. They do not contain any specific information about individual ingredients. They normally restrict themselves to recommending that consumers read the labels carefully, refrain from throwing away the containers or mixing the substances.

3.1.4 Information services of the National Library of Medicine (NLM)

In the *Division of Specialised Information Services*, the *National Library of Medicine (NLM)* has set up the *Toxicology and Environmental Health Information Program (TEHIP)*. This programme stems from the recommendations of the *President's Science Advisory Committee* from 1966 (*Handling of Toxicological Information*). This led on to the *Toxicology Information Program (TIP)* which focussed on creating automated toxicological databases and providing toxicological information and data services. In the mid-1990s this offering was extended to include data from the areas of the environment and health. The overall budget for

[11] http://www.epa.gov/oppt/labeling/tools/phase1/index.html http://www.epa.gov/oppt/labeling/tools/cliphase2/index.html

the special information services in 2007 was USD 14 million[12]. Fig. 22 and Fig. 21 give an overview of the data offering.

Figure 22: Range of the information offerings of the National Library of Medicine (Hudson, 2003)

In addition to the offerings for science and industry, *NLM* also has offerings primarily intended for consumers which are, at the same time, linked to scientific databases. The three most important offerings are:

- **Household Product Database:** contains information on potentially harmful chemical substances in approximately 6,000 consumer products,
- **Tox Town:** interactive graphic access to information on toxic substances, health and the environment,
- **Haz-Map®:** a database with information on the health impact of chemical and biological substances at the workplace.

[12] Source: http://www.nlm.nih.gov/about/2007CJ.pdf

Table 9: Databases in TOXNET

Name	Comments
HSDB® – Hazardous Substances Data Bank	Comprehensive scientifically validated database on 5,000 toxic and potentially toxic substances
TOXLINE ®	Bibliographical database on biochemical, pharmacological, physiological and toxicological effects of medicinal products and other chemicals, three million entries mostly abstracts and CAS[13] numbers
CHEMID*plus*	Structural and nomenclature information for 380,000 chemicals
IRIS – Integrated Risk Information System	Online database of the Environmental Protection Agency (EPA) with information on the risks of more than 500 chemical substances which have undergone an EPA peer review
ITER	Data on estimating the health risk from more than 600 chemical substances permit a comparison of risk assessment through various organisations
TRI – Toxic Chemical Release Inventory	Data on emissions of 650 chemical substances or substance groups in air, water and waste which are reported to EPA by industrial companies with a reporting obligation
CCRIs – Chemical Carcinogenesis Research Information System	Database on 9,000 chemical substances of the National Cancer Institute (e.g. bioassays on carcinogenic or mutagenic substances, tumour promoters, metabolites and inhibitors)
GENE-TOX	Database of the Environmental Protection Agency (EPA) with the results of genotoxic tests on more than 30 chemical substances
DART®/ETIC – Developmental and Reproductive Toxicology/Environmental Teratology Information Center	Bibliographical database on literature on teratology and developmental toxicology since 1950
LactMed – Drugs and Lactation Database	Database on medicinal products and other chemical substances to which breastfeeding mothers may be exposed

Household Product Database

The *Household Product Database* was developed by *DeLima Associates* in 1995 with support from the *Centres for Disease Control and Prevention (CDC)*. It provides answers to the following questions:

- Which ingredients are contained in products?
- Do they include harmful substances?
- Do they include substances which are of importance for allergy sufferers or hypersensitive individuals?
- What alternative products are available which fulfil the same purpose?
- How can the manufacturers be contacted?

In 2000 *NLM* obtained a licence version, supports the annual updating and makes this available on the Internet.[14] Between January and November 2006 6,700 hits were registered every day on the database. Around 20 e-mails with enquiries are received daily.[15]
This makes it one of the most popular *NLM* databases. The database is available in a slightly extended form as a commercial version – *Consumer Product Information Database*[16]; the details are given in Fig. 23.

[13] CAS numbers are registration numbers from the Chemical Abstract Service, a member institution of the American Chemical Society with its HQ in Columbus, Ohio, USA. Via the CAS number information can be accessed on the harmful effects of substances internationally. Under REACH, too, hazard classes of substances can be accessed in the substance database .
[14] The website is accessible on: http://householdproducts.nlm.nih.gov/index.htm
[15] Telephone information V. Hudson, 28 November 2006.

Figure 23: Website of the Consumer Product Information Database

The database provides access to the chemical ingredients and toxicological information on 6,000 products in nine categories with almost 1,900 different use categories (cf. Table 10). The search options give access via the commercial names of the products, manufacturers, chemical ingredients and observed adverse health effects (e.g. headache). The product categories are chosen in co-operation with *NLM*; the selection of products in the respective categories is done on the basis of market shares, supplemented by market analyses in for instance DIY stores which are conducted approximately once a year in Greater Washington DC and in San Francisco[17]. A detailed list of the product types considered is contained in Annex C. This highlights the major degree of differentiation which facilitates searches by consumers. One individual product may be classified in several product types.
The database provides answers to the following questions:

- What are the chemical ingredients in specific products?
- What proportions of them does the product contain?
- Who manufactures the product?
- How can the manufacturer be contacted?
- What are the acute and chronic effects of a chemical ingredient in a specific product?
- What more comprehensive information on the chemical ingredients is contained in the toxicological databases of the National Library of Medicine?

The information in the *Household Products Database* comes from a number of publicly accessible sources like product labels and safety data sheets which may be provided by manufacturers and/or are accessible on their websites. *NLM* and the database providers do not themselves conduct any tests. Nor do they check the completeness or reliability of the

[16] http://www.whatsinproducts.com/
[17] DeLima 2006. Telephone information, 11 December 2006.

manufacturers' details. The database providers endeavour to transcribe the available information error-free from product labels, safety data sheets and other sources.

Manufacturers frequently change their products. Although the operators of the (DeLima and NLM) database endeavour to keep the information up-to-date, it may take some time until the changes have been taken over into the database. All details therefore carry a date. For the above reasons 100 % accuracy or completeness of the data cannot be guaranteed. If very precise information is required (e.g. in the case of poisoning) the database is no substitute for reading the label or contacting the manufacturer. That's why the manufacturer's telephone number and address are listed.

According to *NLM* enquiries are received from manufacturers asking about updating or correcting their data which is done once a year. Some manufacturers ask for the data to be entered more quickly in a uniform data format but this is a difficult endeavour given the large number of manufacturers.

Table 10: Breakdown of products in the *Consumer Product Information Database*

Category	Number of product types	Number of use categories	Number of products*
Automotive	31	137	896
Home maintenance	118	677	2.754
Home inside	81	361	3.323
Hobby/craft	49	230	906
Landscaping/yard	41	221	797
Personal care/use	15	104	1.440
Pesticides	7	86	754
Pet care	9	41	310
Home office	14	21	330
Total	342	1.878	11.510

*) Some products are classified in two or more categories

The following information is available for each product:

- Information on the manufacturer, with a telephone number for information
- If available, warnings from the safety data sheet or label (e.g. first-aid, acute health effects, chronic health effects, carcinogenic effect, dangerous substance classification)
- If available, information on safe use and disposal
- Ingredients from the safety data sheet or label (e.g. substance identity and concentration)

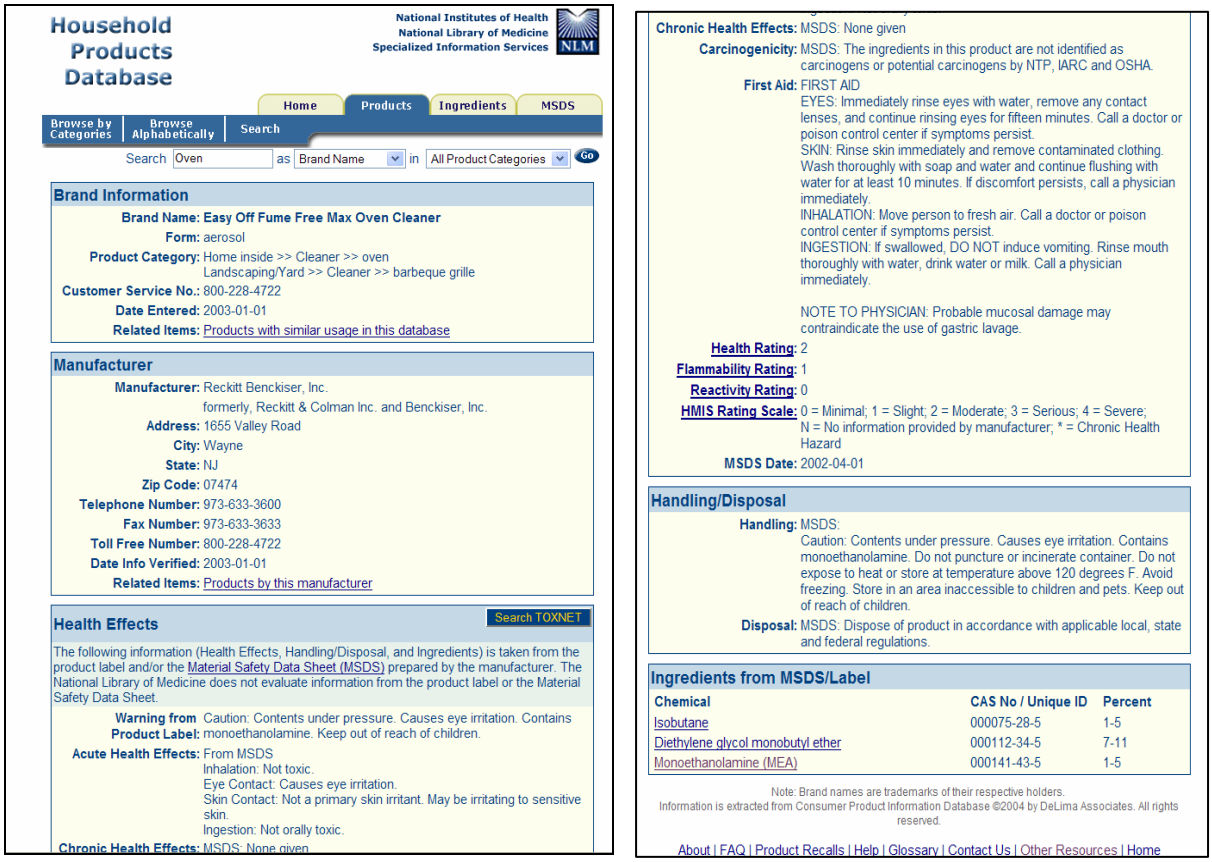
The following search functions are supported:

- Leafing through product categories
- Search by brand name or product type
- Search by manufacturer's name
- Search by ingredients
- Search by words in the field "health effects" of the safety data sheets

Information on the properties of the substances indicated by the manufacturers are generally made accessible on the basis of the CAS numbers with a link to other *NLM* databases (CHEMID*plus* and HSDB, cf. Table 9). This also gives access to the structural formulae and other technical data. Not all substances can be identified by their CAS numbers. For instance additives which are deemed to be trade secrets (additives/ingredients) have a database-specific numerical code. By clicking on the substance name a list can be accessed of

all products registered in the database which contain this substance. The example of an oven cleaner is presented in Fig. 24.

Figure 24: Example "oven cleaner" from the *Household Products Database*

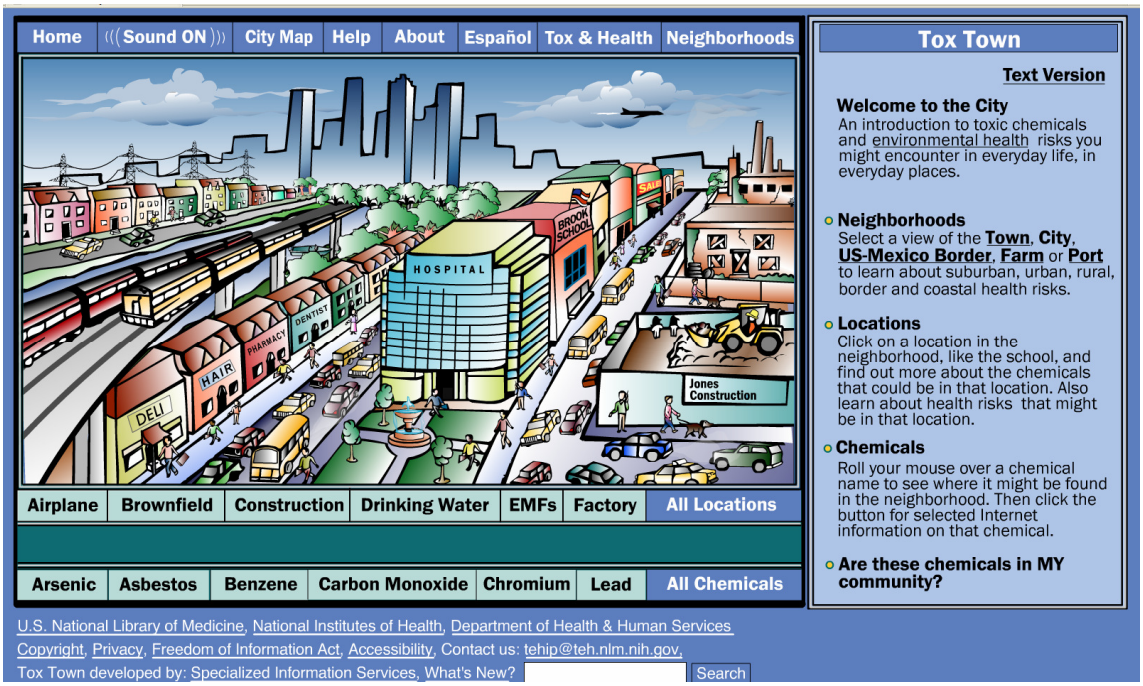


Tox Town

The website *Tox Town* on http://toxtown.nlm.nih.gov/ of *NLM* provides easily comprehensible access to information on toxic substances and other substances in the context of concrete environment scenarios. *Tox Town* is primarily intended for pupils, students and other interested persons. By means of an animated graphic interface the user can reach targeted data and explanations.

Tox Town offers an introduction to the complex subject of toxic chemicals and risks for the environment and health using examples drawn from daily life. It was posted on the Internet in October 2002 on behalf of the department *Specialized Information Services Division* within *NLM*. By means of animated graphics it gives access to information in the TOXNET database (cf. Table 9). At the present time there are four scenarios: small town, city, rural area and the border between the USA and Mexico. By clicking on the scenes information is provided on the respective health risks and specific substances to be found there. For *ToxTown* itself short profiles were drawn up on a number of important contaminants and on environmental problems. Otherwise access is provided to more comprehensive information via links to technical databases of *NLM*, *EPA* and other public institutions. *Tox Town* is an important and high quality resource for people in the education sector.

Figure 25: *Tox Town* website of the *National Library of Medicine* (USA)



According to *NLM* the external costs for the preparation of the platform were around US$ 200,000 per year. According to the competent department *Tox Town* is far less popular than expected with only 200 hits per day in 2006 and only 20 e-mail enquiries per week compared with the initial *Household Products Database*. *NLM* is, therefore, planning targeted media campaigns and plans to inform teachers at schools about the *TOXNET* offerings. [18]

Haz-Map

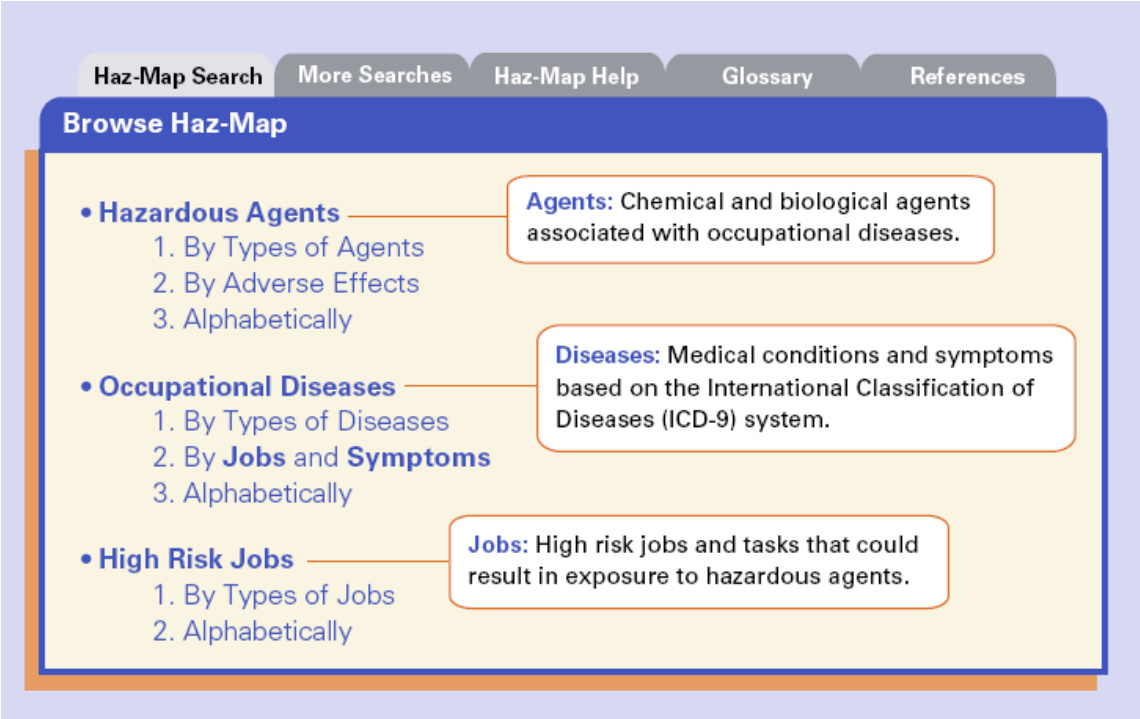
Haz-Map® is a database with information on the toxicological effects of chemical substances, primarily for doctors and other experts but also for consumers seeking specific information on the health impacts of chemical and biological substances at the workplace. The database combines information on workplaces and activity characteristics with specific occupational diseases and their symptoms.

Searches can be conducted via

- the substance group (e.g. metal, mineral dust, pesticide, plastic and rubber, solvent)
- the exact substance name
- the type of adverse effect (e.g. lung toxin, neurotoxin, carcinogen)
- the type of industrial process (e.g. chemical cleaning, metal degreasing, fire control)
- the type of disease (e.g. acute intoxication, respiratory disease, cancer)
- description of the activity (e.g. laying tiles, forestry work) and the symptoms (e.g. cough, skin inflammation)
- the exact medical diagnosis

[18] Telephone information from the National Library of Medicine Bethesda (USA), 27 November 2006

Figure 26: Website of the *Haz-Map* of the *National Library of Medicine* (USA)



In total 1,000 chemicals and biological agents and 180 diseases with their medical conditions and symptoms are recorded in the database.

The database is popular. Currently approximately 1,800 hits per day are recorded. What makes *Haz-Map* so important is that it is linked to other TOXNET databases. For instance it can be accessed from the *Household Products Database*.

3.1.5 Information offerings of industry

As already explained in Chapters 3.1.1 and 3.1.4.1 more comprehensive information is provided for a large number of products on the composition of their ingredients and, where appropriate, their dangerous properties. In many cases this is done in the form of safety data sheets. Many companies operate globally. They, therefore, offer the data in several languages. Some of these data are incorporated into the *Household Products Database*.

More comprehensive information offerings for consumers (e.g. from individual companies or industrial associations) were not identified during the search.

3.1.6 Information offerings of other organisations

Compared with Europe the USA has a comprehensive foundation system. A large number of environmental and consumer associations offer, in some cases, extensive and professionally compiled information services:

- Environmental Defence
- Sierra Club
- National Resources Defence Council
- Greenpeace

- Centre for Health, Environment and Justice (CHEJ)
- Citizens Environmental Coalition (umbrella association of 110 groups in New York)

In conjunction with informing consumers about harmful substances, special mention should be made of *Scorecard* (http://scorecard.org). This is the website of *Environmental Defence*, a national, non-profit organisation with more than 300,000 members.

Since 1967, when a small group of scientists joined forces and managed to secure a court decision handing down a national ban on DDT, this organisation has successfully continued its work with experts from the natural and law sciences. One result of this work is *Scorecard,* a free-of-charge and easily accessible source of local information on environmental risks.

By entering a postal code or by means of interactive maps, interested persons can find out more about the contaminant situation in their neighbourhood. Detailed information is available for more than 11,000 different chemicals. In *Scorecard* chemicals are also assessed in order to determine whether data in the public domain are available or not on the eight main categories of tests for the assessment of health and the environment.

3.1.7 Summary and evaluation

As already mentioned, the United States are the largest global manufacturer of chemical substances. At the same time the Americans began far earlier than the Europeans with the declaration of consumer products and the publication of data on chemicals emitted by companies. In addition there are also numerous environmental organisations which push for greater transparency of environmental data.

The legally binding provisions on the labelling of dangerous preparations and the making available of safety data sheets are comparable in the USA with the situation in Germany and the EU. However, manufacturers in the USA are more willing than manufacturers in Germany not only to label preparations on packaging but also to give consumers access to additional information like safety data sheets.

These information sources are evaluated by the *NLM* in the *Household Products Database*. In a transparent manner they are linked with other publicly accessible information like data on the toxicological effects of substances or with typical clinical pictures to which the substances can be attributed that may have caused the diseases.

This database has been established in a pragmatic manner exclusively with publicly accessible information. The level of funding required was comparatively low. Nevertheless or perhaps because of this it has become a central, much used instrument to source product-specific data on chemical substances in known products. The offering is supplemented by the high quality offering of TOXNET intended more for experts. In parallel information offerings of the ToxTown system are available which were not designed specifically for substances in consumer products but which are presented in an excellent didactic form.

From the USA case study tips can be obtained for improved information for consumers on chemical substances and products. The *Household Products Database* is an example that is worth copying as it caters in various ways for the consumer's need for information. The database permits comparison of similar products and a targeted search for products containing a specific substance, and also gives access to further information on substances. Based on experiences in the USA it is to be expected in Europe, too, that the industrial companies concerned will have an interest in making information available on this platform on a voluntary basis.

3.2 Risk communication in Japan[19]

3.2.1 Statutory provisions on consumer protection and chemicals

In principle, consumer protection in Japan is regulated by four central acts:

- Basic Consumer Protection Act (*Shôhisha kihon hô*, 1968)
- Product Liability Act (Seizôbutsu sekinin hô, 1994)
- Consumer Contract Act (Shôhisha keiyaku hô, 2000)
- Data Privacy Act (Kojin jôhô hogo hô, 2005)

The Basic Consumer Protection Act regulates the organisation of consumer protection. It was passed during the period of major economic growth in 1968 and regulates the basic consumer protection competences, particularly those of the Committee and Council for Consumer Policy. The Product Liability Act, which was passed in 1994 and came into force on 1 July 1995, plays the most important role. It holds manufacturers, processors and importers liable for all damage caused by product defects. The Product Liability Act is also viewed in Japan as being the main motivation for adequate hazard labelling by companies who manufacture warning stickers.[20] In terms of content the Product Liability Act stipulates a right to compensation for defective products which cause damage within the framework of "natural use" to the extent that at the time of production or distribution sufficient knowledge was available about the hazard from the product. Prior to the entry into force of the Act, liability was only accepted pursuant to §709 of the Japanese Civil Code in conjunction with wrongful intent of the manufacturer. The Japanese practice of out-of-court settlements and personal financial risks when trying to assert a claim mean it is difficult to impose claims arising under the Product Liability Act in cases of doubt.

Furthermore, various details of consumer protection are stipulated in other acts (e.g. in the Act on the organisation of the cabinet office), directives or ordinances. The "Act on labelling the properties of products for household use" (*Katei yôhin hinshitsu hyôji hô*, 1973) and the "Act on regulating household products containing chemicals" (*Yûgai busshitsu wo gan'yû suru katei yôhin no kisei ni kan suru hôritsu*, 1973) are of central importance for the handling of chemicals and risk communication.

The "Act on labelling of properties of goods for household use" has the explicit aim of protecting consumer interests. It stipulates that ingredients, qualities and use must be indicated. Furthermore, comprehensive powers have been given to the Minister of Economic Affairs to regulate labelling by means of ordinances. However, there has been no specific stipulation of the type of hazard labelling. For current hazard labelling the Product Liability Act is of more importance. This results from the examples of hazard labelling from the Ministry of Health (cf. Fig. 27) which is only used to a marginal extent.

The Consumer Contract Act and the Data Privacy Act regulate statutory and data protection issues and are not, therefore, relevant within the framework of this study. Other provisions, e.g. warnings can be found in some cases in individual prefectures or communes.

[19] Names are given in the Japanese sequence, starting with the family name; the transcription of Japanese names and terms is done using the revised Hepburn romanisation (http://www.rzuser.uni-heidelberg.de/%7Ehw3/pdf/umschrift-jap.pdf.

[20] The company Bansei mentions the stickers produced by it including the PL label (Product Liability), cf. http://www.bansei.com/~bansei/pointL1007.htm (22.08.2006).

Figure 27: Examples of product labelling in accordance with the "Act on labelling the properties of goods for household use" [21]

The handling of chemicals is regulated in a series of other Acts. Since 1950 the "Act on handling toxic and highly reactive substances" (*Dokubutsu oyobi gekibutsu torishimari hô*) has stipulated that it is the responsibility of the Ministry of Health to specify toxic and dangerous substances. These lists are, however, surprisingly short. They do not contain many substances which are classified as toxic or dangerous in Germany.[22] The most important role in regulating the handling of chemicals is played by the "Act on examining and regulating the production of chemicals" (*Kagaku busshitsu no shinsa oyobi seizô no kisei ni kan suru hôritsu*). This regulates the classification of chemicals by toxic and dangerous substances and by different production and import volumes. It underwent a fundamental review for the last time in 2003. Finally, the Fire Protection Act (*Shôbôhô*) stipulates that only individuals who have passed the test as "dangerous substance handlers“ (*kikenbutsu toriatsukaisha*) may handle chemicals classified as dangerous. The test has been conducted since 1984 by the "Research centre for the fire protection test" (*Shôhishiken kenkyû sentâ*) and is valid for a specific category of substances (e.g. corrosive solid substances, corrosive liquids, self-igniting substances etc.).

3.2.2 Non-state consumer protection

In Japan several groups and organisations are involved in consumer protection. Most of them are local and, therefore, concentrate on local issues. Nationwide organisations are often umbrella organisations of a number of small local groups and are not active independently but merely for the purposes of networking. The largest consumer association in Japan is *Seikyô* (an abbreviation for *Nihon seikatsu kyôdo rengô kumiai* or Japan Consumers Co-operatives Union), a network of numerous regional consumer co-operatives with approximately 14 million members. They have set themselves the goal of achieving a more humane lifestyle and a sustainable society. *Seikyô* produces its own products, primarily foods as well as detergents and distributes them amongst its members. The main topics on which information is provided are food safety and its own products.

The numerous other nationwide umbrella associations or consumer protection groups do not offer hardly any actual information content but merely have a co-ordinating function and refer people on matters of content to the official websites. Local consumer protection groups focus less on topics like chemicals in products for household use and tend to offer practical services like Food Coops.

[21] From the homepage of the Ministry for Economic Affairs, Trade and Industry http://www.meti.go.jp/policy/consumer/seian/hinpyo/l_q&a/q&a_1.htm (22.08.2006).
[22] In English accessible on http://www.nihs.go.jp/Act/dokugeki/edokugeki.html.

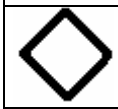
Statistical information on the activities of consumer protection groups in Japan can be found in the report of the cabinet office. State support is extremely important for many of these groups as they only have access to minimal financial and logistic resources. More than a quarter of total financing comes from the state (cf. Vosse 2000). Hence many groups co-operate with public authorities.

3.2.3 Risk communication through hazard labelling

The foundations for the labelling of products in Japan are set out in the "Act on the labelling of properties of goods for household use". It encompasses product categories like textiles, plastic products, electronic products and various industrial goods. There is no separate category for chemicals. Nor does the Product Liability Act contain any regulations on hazard labelling but merely specifies sanctions for inadequate labelling. *De facto* Japanese companies operate largely in conjunction with international and Japanese standards. They mainly use the symbols laid down in ISO 3864 and ANSI Z 535.3 and the symbols planned for IEC TC/96. These are supplemented by detailed written warnings and various forms and colours (Table 11).[23] The Japanese standards, JIS Z 9101 to JIS Z 9107, were prepared on the basis of international documents. However they are not anchored in law but are seemingly largely complied with because of the Product Liability Act.

The blue instruction on use applies to actions that must be taken. For instance electrical appliances with a specific symbol must be earthed.

Table 11: Hazard labelling used at the present time in Japan

	Symbol	Meaning
	Symbol with a line through it	Ban on carrying out a specific action in order to avoid the hazard
	Plain symbol	Reference to a specific action to avoid a hazard
	Circle	In rare cases an extremely dangerous hazard
	Upended square	Hazard in conjunction with minor misuse
	Triangle (corner facing upwards or downwards)	Hazard in conjunction with clear misuse or erroneous use
	Red	Ban on specific application or major hazard
	Orange	Hazard
	Yellow	Warning
	Blue	Information for specific uses

[23] According to http://www.pref.ehime.jp/ecc/mark/keikokuhyoji.htm, (22.08.2006), a website of the Ehime prefecture, the only website of regulatory authorities which gives an explanation of the symbols used.

The symbols are always accompanied by explicit information on the hazards. Depending on the nature of the risk the word "Warning!“ (*keikoku*) or the word "Attention“ (*chûi*) is added along with information like "flammable", "corrosive" etc. Furthermore, there may be instructions on use like "store in a cool place", "ventilate well after use" etc. and first aid instructions. These instructions are always placed on the product itself. Hence an explanation of the hazard symbol is only necessary to a limited degree.

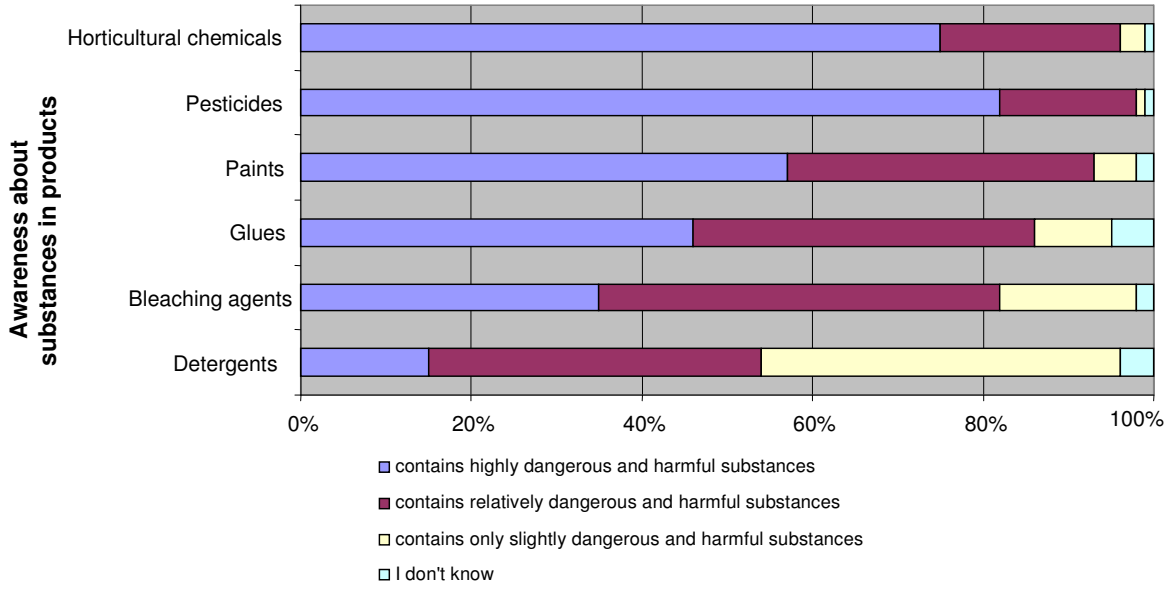
Figure 28: Example of a safety instruction for a xylene-containing car maintenance product

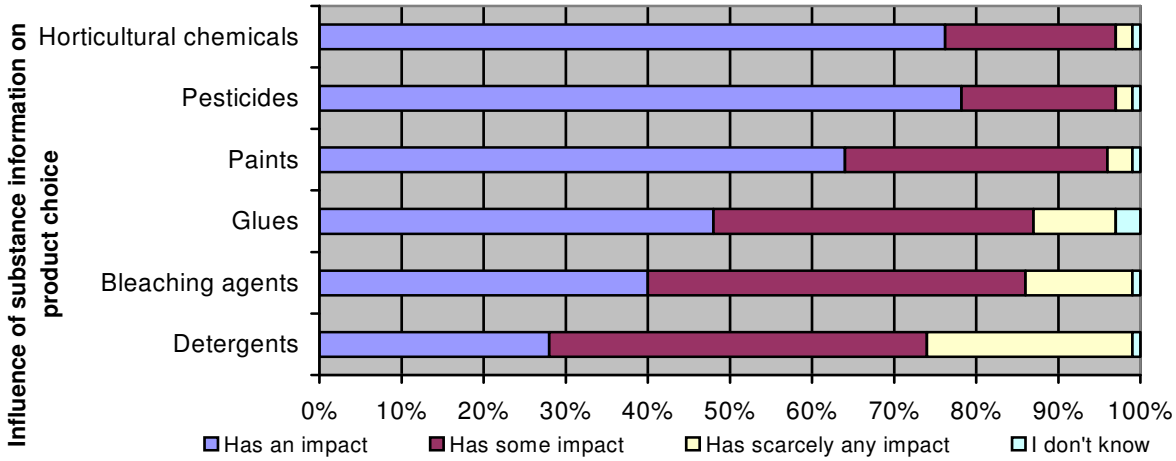
Adaptation in line with the *Global Harmonization System of Classification and Labelling of Chemicals* (GHS) is currently underway. Whereas the guidelines must have been implemented internationally by 2008, the states represented within the Association of Southeast Asian Nations (ASEAN) have decided to do this by the end of 2006. Japan has also signed up to this objective. The forthcoming systematic review of the hazard labelling of chemicals is also the dominant topic in risk communication on the Internet and in the media. Whereas the previous regulations are practically no longer being communicated, increasing information is being provided about the regulations pursuant to GHS. For instance there are information brochures on GHS from the Ministry of the Environment, the Ministry of Health and the Ministry of Economic Affairs. The main distinctive feature here is the target group of the brochures. Whereas the brochure of the Ministry of the Environment is directed at end consumers and only provides basic information in simple language, the Ministry of Health’s brochure offers detailed information. The Ministry of Economic Affairs’ brochure focuses on the introduction and availability of websites on GHS.

In April 2004 the Ministry of the Environment published the findings of a survey on awareness and product selection with regard to the labelling of chemical products conducted in cooperation with the University for Environmental Studies Tottori.[24] The results are presented in Fig. 29. 1,039 Japanese men and women were asked about their perception of chemical products, their behaviour when purchasing chemical products and labelling within the intendment of GHS. The overarching question was whether the labelling of chemical products needed to be improved. 54.1 % of the interviewees answered yes. Furthermore, awareness of a possible negative impact of chemical products on health was very high. 94 % of the interviewees agreed or agreed entirely with the sentence, "Many [chemical products] have a negative impact on the health of humans and growing animals" fully or almost fully. Furthermore, numerous chemical products were deemed to be dangerous.

[24] Kankyôshô kankyô anzen ka (Hg.): *Kagakuhin no yûgaisei hyôji nado ni kan suru ankêto chôsa kekka* [results of a survey on hazard labelling of chemical products etc.], Tokyo 2004
(available on the Internet on http://www.env.go.jp/press/file_view.php?serial=5536&hou_id=4909 [14.08.2006, 11:01].

Figure 29: Results of the survey on awareness and product selection in conjunction with the labelling of chemical products in Japan





Attention also focused on the sources of information in general and important information in particular about the dangerousness and harmfulness of chemical products. 81.1 % of the interviewees indicated the media as a source of information followed by 57.1 % who indicated the labelling of products as an information source. 15 % even considered hazard labelling as a source of important information. It is interesting to note, however, that many of the interviewees stated that the safety of chemical products was not relevant for their purchase decision. Whilst 536 out of 934 interviewees (others: no information) were worried about the safety of the product, only 190 out of 934 interviewees indicated that safety played a role when purchasing pesticides for household use.

One of the questions linked to the introduction of GHS had to do with the importance attributed by the interviewees to the individual hazard symbols. Most of the interviewees were unable to assign many of the symbols to the right hazards. In the case of highly flammable

substances only 17.5 % were able to do this. The worryingly low values might explain why several state bodies have posted comprehensive information about GHS on the Internet.

The special features of state risk communication in Japan

One special feature of state risk communication in Japanese is the pilot project for chemical advisers which was launched in April 2003. They are to adopt a neutral scientific standpoint and specialise in the organisation of information events and the "easily comprehensible presentation of scientific information". At the present time, there are 25 official chemical advisers who work full-time in many cases in environmental companies, NGOs or in the education sector.[25] In the first two years of the programme chemical advisers were requested 51 and 42 times respectively by regional institutions, companies or co-operatives, mostly for lectures or to provide instruction on the emission register or the safe handling of chemicals.[26] This drop is attributed to the lower number of requests from the non-state sector. Hence the further development of the programme is questionable. No evaluations of the work of the chemical advisers have been available so far.

The Ministry of the Environment has a special section on its website on risk communication on chemicals.[27] It offers information on three levels for children, ordinary citizens and experts. The pages for adults and children are identical although more complex facts are presented and linked to the Japanese emission register. Unfortunately the FAQ pages were not available. The risk communication targeted specifically at children is not unusual in Japan. The Ministry of the Environment publishes brochures specifically for children on an introduction to handling chemicals entitled "Chemicals in our life" or "Motor vehicles and chemistry". Furthermore, these brochures are also integrated into an interactive homepage.[28] These child-oriented sites are part of the website of the Ministry on Risk Communication. The National Institute of Technology and Evaluation (NITE) has its own site which gives children an introduction to chemicals. In this case it endeavours rather to defuse any fears or concerns in conjunction with chemicals.[29]

The Ministry for Health, Labour and Welfare set up a Centre for Health Information in 2000 which provides comprehensive information on chemicals in general and on hazard labelling in particular. For instance it publishes a brochure with explanations and examples of global hazard labelling, European hazard labelling, the hazard instructions required in Japan and the labelling used by companies without any standardisation basis.

Risk communication by industry

The way in which industry deals with consumer protection questions is double-edged. On the one hand it has been demonstrated repeatedly in the past that Japanese industry is prepared to accept even the most severe consequences of its production activities. On the other hand there are also positive measures. For instance the Japanese chemical industry has a centre for ecology, toxicology and information. On its website it provides comprehensive information on the risks and management of chemicals. The website also provides extensive information on REACH.[30]

Spot checks of large pharmaceutical and chemical companies[31] did not reveal any comprehensive explanations of warnings etc. However extensive information was available on

[25] The list with links of biographical data sheets is available on http://www.ceis3.jp/adviser/ (access on 22.08.2006).
[26] Exact lists are available on http://www.ceis3.jp/adviser/jiseki/jiseki.html (2003/4) and http://www.ceis3.jp/adviser/jiseki/H16haken.html (2004/5) (access on 22.08.2006).
[27] http://www.env.go.jp/chemi/communication/index.html
[28] http://www.env.go.jp/chemi/communication/e-learning/index.html (22.08.2006).
[29] http://www.nite.go.jp/kids/sitemap.html (22.08.2006).
[30] http://www.jetoc.or.jp/publist2.html#2-2-7.
[31] A list of large chemical and pharmaceutical companies can be accessed on http://www.biojapan.de/btlinks.html (status 22.08.2006).

safety data sheets.[32] Furthermore, most chemical companies offer telephone hotlines for advice. Information is also available on a smaller scale from specialised companies like for instance Nippon Soda[33] or the pharmaceutical company Yagiri[34]. They provide information on the handling of their products and emergency telephone numbers on the Internet. Outside the chemical industry explanations on hazard labelling were mainly to be found in the electronic sector.[35] Comprehensive collections of examples of hazard labelling could only be found on the websites of the manufacturers of stickers with safety instructions – but without any more in-depth explanations.[36]

3.2.4 Assessment of risk communication in Japan

Risk communication is a relatively new term in Japan. The term has indeed been used by experts for some time but it is only in the last five years that it has been taken over into everyday language, encouraged by a few food scandals. In the field of chemicals risk communication is not very advanced.

The responsibilities arising from the Product Liability Act for products have changed the starting conditions for industry and created a major incentive for the legally backed labelling of products. In this context, the labelling with hazard symbols is accompanied by clearly formulated instructions on use, particularly as there is still no statutory stipulation of a specific of a certain type of labelling and the manufacturer is free to choose between various standards.

On the consumer side there is a fundamental awareness of hazards when handling chemicals. However, other topics of consumer health protection in particular food safety are far more centre-stage in the media and in the awareness of the population. A study conducted in Japan in preparation for the forthcoming introduction of GHS has revealed that many Japanese people would not intuitively understand the hazard labelling based on the forthcoming standards which means there is a major need for explanations.

Overall the information on hazard labelling is not sufficient. Official sites with detailed explanations are not easy to find particularly on the websites of the competent Ministries. The more specific the required information is, the easier it is to find. Detailed information on the hazards of special chemicals and their entries in safety data sheets and emission registers are linked up on almost all websites. Despite the overall situation which is not unproblematic, there are some points which should be examined for use in Germany. Mention should be made in particular of the numerous websites with information specifically for children and adolescents. No data are available on the numbers of users or acceptance by these groups.

3.3 Risk communication in Spain

3.3.1 Public risk perception

In Spain a considerable number of accidents in the home and at the workplace are still caused by the erroneous handling of chemicals. According to estimates between 18 and 30 % of all accidents at work are linked to chemicals. Because of the many different types of occupational diseases it is very difficult to determine the exact magnitude of the impact of

[32] e.g. on http://www.bayercropscience.co.jp/msds/index.htm.
[33] http://www.nippon-soda.co.jp/eco/hi-chlon/bathtop/r-lineup.html.
[34] http://www.yagiri.co.jp/school/taki/keikoku.htm.
[35] e.g. http://www.sanyo.co.jp/cs/hyoji/keikoku.html, http://www.sharp.co.jp/support/safety/cautionsign.html.
[36] e.g. http://www.anzentaisaku.com/t-pla/index.htm, http://www.safety.co.jp/web/pl/pl_pl.html (Stand jeweils 23.08.2006).

these substances on human health. According to estimates there are 4,000 fatalities, 33,000 cases of disease and 18,000 accidents amongst people who work with chemicals (Blount 2005).

In the *Instituto Nacional de Toxicología* (National Toxicological Institute) the Department for Information on Dangerous Substances (*Servicio de Información Toxicológica*) received 137,085 phone calls in 2003 seeking advice on handling chemicals. In more than 50.2 % of the cases, the reason for the call was handling potentially dangerous substances in the home or in the workplace (CNMA 2004). Many of the callers sought information and advice on precautionary measures when handling toxic substances particularly about their use and storage, and also about the disposal of residual substances produced by these chemicals.

Nevertheless, according to the most recent "Environmental Report for 2005 in Spain" (*Informe Ambiental España 2005*; cf. CIS 2005) Spanish people classified the impact of chemicals on humans and their environment in daily life as comparatively low. They view the following environmental problems as more important: in first place air pollution followed by pollution by industry and the excessive number of cars.

Problems like the heavy degree of intoxication of rapeseed caused by chemicals, intoxications with pesticides (biocides and insecticides) in the *Valle de Hebrón* Hospital in Barcelona, the sinking of the Prestige ship which caused the biggest environmental catastrophe ever in the history of Spain, the protest activities by various environmental organisations, the scientific studies on carcinogenic and mutagenic substances and their toxicity as well as the new EU policy on handling chemicals are attracting more and more attention through the mass media. There has been increasing discussion in Spain in recent times about the need to examine the effects of these chemical substances on human health.

One indication of this is the media presence of environmental organisations like Greenpeace, Environmentalists in Action (*Ecologistas en Acción*) and WWF/Adena[37], who jointly endeavour to attract the attention of the general public to the health risk from contaminants to which it is exposed.

3.3.2 State competencies

In Spain the Ministry of Health and Consumer Affairs (*Ministerio de Sanidad y Consumo*) is responsible for drawing up statutory regulations on chemicals and chemical preparations in co-operation with the Ministry of the Environment, Industry and Energy (*Ministerio de Medio Ambiente, Industria y Energía*), the Ministry of Labour and Social Affairs *(Ministerio de Trabajo y Asuntos Sociales)* and the Ministry of Agriculture, Fishery and Food *(Ministerio de Agricultura, Pesca y Alimentación)*.

Four legal documents set out in parallel consumer protection and the handling of chemicals in Spain and the European Union[38]:

- *Real Decreto* (Royal Decree) 363/1995 of 10 March 1995 which transposes the European legislation on the classification, packaging and labelling of dangerous substances (Directive 67/548/EEC).
- *Real Decreto* (Royal Decree) 255/2003 of 28 February 2003 which transposes the European legislation on the classification, packaging and labelling of dangerous preparations (Directive 1999/45/EC).

[37] The branch of the Worldwide Fund for Nature organisation in Spain established in 1968.
[38] *Chemical products, legislation.* http://www.msc.es/ciudadanos/saludAmbLaboral/prodQuimicos/legislacion.htm

- Council Regulation (EEC) No. 793/93 on the evaluation and control of the risks of chemical existing substances.
- *Real Decreto* (Royal Decree) 1406/1989 of 10 November 1989 which transposes the European legislation relating to restrictions on the marketing and use of certain dangerous substances and preparations (Directive 76/769/EEC).

Responsibility for enforcing the Acts on chemicals and dangerous chemical substances in Spain is the responsibility of the Department for Environmental Protection and Safety at Work (*Subdirección General de Sanidad Ambiental y Salud Laboral*), which comes under the portfolio of the Ministry of Health and Consumer Protection (*Ministerio de Sanidad y Consumo*). Other organisations, which also come under the portfolio of the Ministry of Health, are responsible for risk communication. They play an important role as they are the first port of call for consumers when deciding on a product or a service and the related obligations and rights. Table 12 (with no claim to completeness) presents the interdependencies of the state institutions (RD, 2004).

Furthermore the autonomous regions (CCAA *Comunidades Autónomas*) are responsible for testing, monitoring, control and sanctions in the field of dangerous chemicals and preparations.

But who is responsible for informing consumers about the risks linked to their use of chemical substances? (Contact for consumers on daily questions for instance the impact of insecticides, cleaning agents, certain bleaching agents on human health?)

In Spain consumers receive assistance from the citizens' service of the Ministry of Health (MSC). From there consumers are directed to the competent authority in their autonomous region. In most cases, questions are directed to the Office for Health and Consumer Protection (*Consejería de Sanidad y Consumo*) which, in turn, has links with the Food Hygiene Office (*Servicio de Higiene Alimentaria*), the Spanish Toxicology Association (*Asociación Española de Toxicología*) and other consumer protection organisations. Further reference publications are available on the subject "Safety of Products and Services" (*Seguridad de productos y servicios)* which are not restricted to chemicals, as well as various websites.

Consumers exposed to chemicals at their workplaces have easier access to the relevant information. In this case direct reference can be made to prevention of accidents at work and the trade union Institute for Accidents at Work, Health and Environment (*Instituto Sindical de Trabajo, Ambiente y Salud, ISTAS*) can be contacted. ISTAS is an independent, non-profit trade union which was set up by the Confederation of Trade Union Committees (*Confederación Sindical de Comisiones Obreras, CC. OO.*). Its main task is to examine and communicate information on dangerous substances by calling for the gradual phasing out and replacement of these products in production methods and in the work process (e.g. organic contaminants or endocrine disruptors). Figs. 3-6 have been taken from the information campaign of the ECOinformas Project (ECOinformas 2006) which seeks to raise awareness about the hazards linked to chemicals.

The ECOinformas Project (http://istas.net/ecoinformas/web/visita.asp) is supported by ISTAS, the Biodiversity Foundation *(Fundación Biodiversidad*) and the European Social Fund. It aims to prepare Spanish small and medium-sized companies for the new environmental Directives and, at the same time, to raise their ability to compete. The main Project goals are communication, continuing training and advice for employees and their associations. By means of ECOinformas and a combination of printed and digital media, ISTAS should be

able to reach a large number of people in employment and, at the same time, encourage use of new technologies.

The Forum for Risk Prevention can be accessed on the ISTAS website which provides useful information free-of-charge information on handling dangerous substances:

- Information on preventing accidents at work (e.g. posters, brochures, videos)
- The most important statutory regulations on prevention of accidents at work in the individual autonomous regions, Spain and the EU
- The RISCTOX database with information on industrial products containing contaminants
- A database with further information and suggestions on products, production methods and clean technologies which can be used in a company
- Description of new methods, examples and experience in handling chemicals
- Brochures (¿conoces lo que usas?) on products and substances at the workplace which may be harmful to health or damaging for the environment (cf. Figure 30)

Table 12: Consumer protection competencies in Spain

<table>
<tr><td colspan="2">Ministry of Health and Consumer Protection (Ministerio de Sanidad y Consumo, MSC)</td></tr>
<tr><td>State Secretary for Health and Consumer Protection (Subsecretaria de Sanidad y Consumo)</td><td>Secretary General for Health
(Secretaria General de Sanidad)</td></tr>
<tr><td>Directorate General Consumer Protection and Citizens' Services
(Dirección General de consumo y atención al ciudadano)</td><td>Directorate for Public Health (Dirección General de Salud Pública)</td></tr>
<tr><td>National Consumer Institute
(Instituto Nacional de Consumo)</td><td>Department Environmental Protection and Safety at Work
(Subdirección General de Sanidad Ambiental y Salud Laboral)</td></tr>
<tr><td>Department Statutory Regulation and Consumer Arbitration
(Subdirección General Normativa y arbitraje del consumo)</td><td rowspan="3">• Assessment, prevention and control of environmental influences on human health; elaboration of joint provisions for the implementation of EU Directives on health protection; creation of a process for risk monitoring and hazard awareness; elaboration of draft regulations for water, air, risks for patients exposed to x-rays and non-ionised rays.
• Recording, listing and assessing the degree of risk from biocides and chemicals for human health as well as risk communication on new and existing substances.
• Establishment of criteria for the classification, packaging and labelling of chemicals and dangerous substances; estimation of the degree of risk for human health from pesticides and transposition of EU Directives for the control of dangerous substances.
• Promotion and support for safety at work in co-ordination with the Health Act 14/1986 of 25 April 1986 (Ley 14/1986, de 25 de abril, General de Sanidad) and the Act on preventing accidents at work 31/1995 of 8 November (Ley 31/1995, de 8 de noviembre, de Prevención de Riesgos Laborales) are the responsibility of the Ministry of Health; furthermore competences of the above-mentioned Ministry which is steered by the National Committee for Health and Safety at Work (Comisión Nacional de Seguridad y Salud Laboral) and relations to the autonomous regions (Comunidades Autónomas) in the field of safety at work.
• Co-ordination of communication between the working groups which are active in the field of environmental and radiation protection under the aegis of the territorial council in the state health system (Consejo Interterritorial del Sistema Nacional de Salud).</td></tr>
<tr><td>Research Centre Quality Assurance
(Centro de Investigación Control Calidad)</td></tr>
<tr><td>• Analysis, testing and recording quality control and safety of consumer goods and services.
• Training and advice of technical staff.
• Increase in analytical and technical quality control in the field of consumer goods and services.</td></tr>
</table>

Furthermore, professional users should bear in mind the manufacturer's information which is printed on the label and supplemented by the safety data sheet (FDS).

- Product labelling: name of the chemical or commercial designation of the preparation
- Composition: list of the dangerous substances contained by concentration and degree of toxicity
- Distributor's data: name, address and telephone number
- Hazard labelling using corresponding hazard symbols (pictograms) and hazard information (e.g. toxic, highly flammable etc.)
- Dangerous substance labelling (R phrases)
- Safety phrases (S phrases)

Figure 30: Brochures on dangerous products and substances at the workplace

Irrespective of whether the product containing the dangerous substance is used in the home or at the workplace, it must carry instructions on use and warnings about contaminant content (cf. Fig. 30, Fig. 31).

Figure 31: Consumer information on a detergent

3.3.3 NGOs/Press

The environmental protection organisations and, to increasing degree, the press endeavour to make sufficient information available to the public at large. For instance, Greenpeace published several articles[39]:

- Chemical-free Fashion *(Moda sin tóxicos)* (19.06.2006); Swimming in Chemicals (Nadando en químicos) (03.11.2005);
- A present for life: Chemicals in maternal and umbilical cord blood *(Un "regalo" para la vida: sustancias químicas peligrosas en la sangre del cordón umbilical)* (08.09.2005);

[39] http://www.greenpeace.org/espana/campaigns/t-xicos/

- Safe chemistry with easy access *(Química más segura al alcance de la mano* (13.052005);
- Eau de toxics. A study on chemicals and perfume *(Eau de tóxicos. Una investigación de químicos en perfumes)* (11.02.2005);
- Toxic clothes of the Disney brand *(Ropa tóxica marca Disney)* (15.04.2004);
- Chemical heritage: toxic substances threaten children (Legado Químico: contaminación en la infancia) (19.02.2004);
- Chemicals consumption (Consumiendo Química) (28.10.2003).

In a similar manner the organisation "Environmentalists in Action" *(Ecologistas en Acción)* and the head of the ""Campaign against Chemicals" *(Campaña sobre químicos)* Vicente Moreno are endeavouring to attract more attention amongst the public at large using consumer-friendly information. The information brochure "Expose myths about chemicals" *(Desmontando mitos sobre las sustancias químicas)* aims to remedy end consumer misconceptions about synthetic substances.

Furthermore, there are articles in the press which deal with this topic. The following articles[40] have been published in the Spanish daily "El País":

- "Living with lots of chemistry" (Vivir con mucha química, 30.05.2006),
- "Toxic substances in the supermarket" (Tóxicos en el supermercado, 15.11.2005),
- "An ignored risk of an accident at work" (Un riesgo laboral ignorado, 12.05.2005),
- "Contaminants in food which increase the risk of intestinal cancer" (Ciertos contaminantes presentes en la dieta elevan el riesgo de padecer cáncer de colon, 05.05.2005),
- "Pesticides in food" (Pesticidas en la dieta, 08.02.2005).

These publications familiarise the public at large with terms like, for instance, contaminant exposure and the name of some chemical compounds (e.g. parabene, phthalates, benzophenone). They also contain information about the products contained in them and about the findings of scientific studies on the harmful impact of some chemical substances.

Industry itself does not offer consumers any additional information about handling dangerous substances which goes beyond the statutory labelling obligation and safety data sheets.

3.3.4 Conclusions

Optimising consumer information about chemical products, which are used daily, is increasingly being seen as an important task in Spain. Research reveals that the activities in Spain on the implementation level do not extend very much far beyond complying with statutory provisions and transposing Community legislation.

In practice, it has been shown that end consumers obtain more information via the mass media or through the information campaigns of environmental organisations than from state organisations or industry. On various levels the state institutions offer contact points for providing information to consumers. However, there does not seem to be a concept for proactive consumer information that reflects the various target groups and sub-topics.

According to the Spanish Toxicological Association (2002) manufacturers should also help to improve this situation by making the information in the safety data sheets easily accessible

[40] Author: David Segarra

to everyone. Furthermore, the public authorities should ensure regular monitoring of the labelling of products for use in the household and inform the general public via various pathways. Then consumers would consciously grasp the importance of the labelling of the chemical products which they use daily.

4 Conclusions and Recommendations

Based on the results from the expert survey, the literature examined and the analysis of the communication tools in the selected countries, recommendations are made here for the further development of three information levels:

- Information on the product
- Information sheets in the shop or consumer advice bureau
- Information system on the Internet

Table 13 gives an overview of the problem areas and solutions. The main information should still be directly accessible on the products. The next in-depth level would entail more comprehensive information sheets in the direct sales environment. Even more comprehensive information would then be available for particularly interested circles on the Internet. The content of these three information levels could be co-ordinated in such a way that they supplement each other or build on one another and, what is very important for consumer trust, offer non-contradictory information.

Table 13: Extension of the information systems for consumer health protection concerning chemical substances in products

Information level	Problem	Solution
Information on the product	Access to easily comprehensible information on substances, the related risks and safe use of the product is difficult	Extension of existing label systems
	Access to information on substances of very high concern in products for non-commercial use is not simple pursuant to Article 33 of the REACH Regulation	Mentioning the presence of substances of very high concern directly on the product
Information sheets in the shop or in consumer advice bureaus	For many products it does not make sense or is not possible to cover the need for information by listing details on the product (e.g. textiles, furniture)	Production of product group-specific information sheets
Information system on the Internet	A comparison of information on substances in similar products is difficult	Systematic compilation of available data
	The sourcing of more comprehensive information on substance properties and substance risks is difficult	Link to data on toxicology and risk assessment

All other existing information components for consumers could be supported by a system of this kind. They would not then be superfluous as they complement each other, firstly regarding the various target groups, secondly with a view to the media not mentioned here (e.g. print media). The three-level approach would make it possible to cater for the differing basic information needs of the population.

Information on the product
A full declaration of the ingredients on the products was not deemed to be either practicable or helpful in the interviews conducted. The differentiated extension of the declaration obligation would be more suited to providing consumers with specific information and drawing their attention to opportunities for more extensive information offerings.

In this context mention should be made of the information on substances of very high concern in products as Article 33 of the REACH Regulation does not envisage any general declaration obligation for substances of very high concern on a product itself if there is not already a labelling obligation for the substance of very high concern as a dangerous substance (e.g. because of its CMR property). The supplier of a preparation containing more than 0.1 % of a substance of very high concern must give the industrial or commercial user the information at its disposal on the safe use of a product, at least the name of the substance. The non-commercial end consumer merely has the right to obtain this information within 45 days from the product supplier. As, however, consumer products can also be acquired by commercial users and the supplier cannot always clearly determine the category of products of his customers, it makes sense to put this information on the product itself.

The possible introduction of a "REACH-compatible" label was not advocated in the interviews conducted for various reasons (cf. Chapter 2.4.1.3). The view expressed was that existing, well known label systems should be extended. They include for instance the "Blauer Engel“; for other products, the emphasis could be placed more on health protection criteria than has been the case up to now. To this end, a more comprehensive study could examine what concrete extension steps would be possible.

Information sheets in the shop or other (advice) bureaus
The introduction of information sheets, which only provide information in a *substance-based* manner on hazards, risks, actions etc., was not recommended in the interviews conducted. If, however, information sheets of this kind were available for specific product groups in shops or consumer advice bureaus and provided important information in a short, succinct manner, this could be helpful for many consumers. Comparable information sheets are already available in DIY markets on specific product groups (e.g. wall paints). They don't just cover health topics but also offer more comprehensive information.

Particularly in the case of products which are not subject to mandatory labelling like furniture, toys and textiles, data on substances used in the production process are not available in a transparent manner. There is, therefore, a need for systematically processed information on substances and the associated health risks.

Against this backdrop, a pilot project is recommended in which a system would be tested for the product areas (toys, furniture, textiles) deemed to be urgently required. The pilot project would examine existing uncertainties concerning data availability, acceptance and practicability and identify steps to overcome these deficits. It should, for instance, examine how information sheets are accepted by consumers when they exclusively address the health aspects of chemicals in the product groups or look at combination options with other subjects, for instance sustainability of fair trade with a view to attracting greater attention to substances and health risks, too.

Given the growing importance of Internet shopping, a pilot project should also examine what opportunities there are for distributing these information sheets on the web. There may be good opportunities for linkage with the Internet information system recommended below.

Information system on the Internet
Most of the expert interviewees were of the opinion that a systematic, impartial information system for consumers would be both welcome and practicable (cf. Chapter 2.4.1.5). Access should be on a product basis as consumers initially orient themselves towards products. However, the system should also facilitate access to data on substances and their properties. The suitable providers of a system of this kind are state authorities like the Federal Institute for Risk Assessment (BfR) or the Federal Environmental Agency (UBA) and independent organisations like, for instance, Stiftung Warentest. An Internet information system of this kind would be an up-to-date response to the growing circles in the population, particularly people "with a central interest" and multipliers (e.g. citizens advice bureaus, schools, graduated information). The conditions for the acceptance of a system of this kind are up-to-dateness, the reliability of the information provided and impartiality. It should offer transparent access to the assessments of the substances and product groups described.

This requirement profile is largely met by the model of the *Household Products Database* (cf. Chapter 3.1.4.1) which is already widely used in the USA. The system has a product group structure. Access and maintenance are the responsibility of an impartial office, the *National Library of Medicine*. The advantage of this system is that it only compiles publicly available data on ingredients in household products and combines them with data on toxicology and environmental impact.

The information system makes possible a comparison of similar products, permits a targeted search for products containing a specific substance and provides access to further information on the substances. The first step is to compile the data on the basis of the statutory provisions. Experience in the USA would seems to indicate that industrial companies in Germany would also be interested in making available supplementary information on a voluntary basis in a system of this kind.

Despite a few practical problems it is also realistic in Germany to launch a German-language product information database initially restricted to a few products. For this the following steps are necessary:

- laying down the product categories to be examined;
- selecting representative products (e.g. on the basis of market analyses);
- collecting the available data;
- linking the databases (e.g. of the European Chemicals Bureau, ECB) to more comprehensive information on toxicological assessment.

When compiling the available data, the following sources could be used:

- information in accordance with the Detergents Ordinance;
- information in accordance with the Cosmetics Ordinance;
- voluntary information from manufacturers (e.g. safety data sheets);
- other information sources (e.g. product tests).

As it is not possible to examine the manufacturer’s information fully from an expert angle, this information should be posted together with source and date. The systematic compilation would reveal differences in the degree of detail in the manufacturer's data. This subordinate goal could be achieved with a project of this kind.

Thought should be given to involving retail distributors in the financing of a database of this kind. According to Article 33 of the REACH Regulation retail distributors are duty bound to pass on information from the manufacturers to customers. Hence, it can be assumed that

this would be in their own interest. Finally, it would mean that commercial outlets would not have to compile the information individually but could refer to a central information tool.

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6 Annex A

6.1 Questionnaire

Theories

A) The previous information policy on health aspects of chemicals in public products is generally sufficient.

Totally agree	Generally agree	Tend to agree	Tend not to agree	Generally disagree	Totally disagree
O	O	O	O	O	O

No information: O

B) What percentage of the population would you describe as being *able to judge a risk* concerning with health risks in public products)?

0 to 20	20 to 40	40 to 60	60 to 80	80 to 100
O	O	O	O	O

No information: O

C) What percentage of the population would like the decision about whether a product entails chemical risks to be taken for them taken preferably by the state and not have to decide themselves?

0 to 20	20 to 40	40 to 60	60 to 80	80 to 100
O	O	O	O	O

No information: O

D) Information on the health risks from chemicals in products is sufficient (instead of information about hazards).

Totally agree	Generally agree	Tend to agree	Tend not to agree	Generally disagree	Totally disagree
O	O	O	O	O	O

No information: O

Need for action

E) Generally speaking, should a more proactive information strategy on ingredients and their health aspects be pursued (instead of building up a so-called fetch information offering)?

Totally agree	Generally agree	Tend to agree	Tend not to agree	Generally disagree	Totally disagree
O	O	O	O	O	O

No information: O

Reasons: ...

F) In which **product areas** do you see a need for improvement?

	Very high	High	Moderate	Little	Very little	Not at all	No information
Cosmetics/body care products	❑	❑	❑	❑	❑	❑	❑
Paints/varnishes	❑	❑	❑	❑	❑	❑	❑
Textiles	❑	❑	❑	❑	❑	❑	❑
Consumer electronics	❑	❑	❑	❑	❑	❑	❑
Information and communication electronics	❑	❑	❑	❑	❑	❑	❑
Motor vehicles	❑	❑	❑	❑	❑	❑	❑
Toys	❑	❑	❑	❑	❑	❑	❑
Furniture	❑	❑	❑	❑	❑	❑	❑
Household cleaning products	❑	❑	❑	❑	❑	❑	❑
Pesticides*	❑	❑	❑	❑	❑	❑	❑
Biocides*	❑	❑	❑	❑	❑	❑	❑
Food additives*	❑	❑	❑	❑	❑	❑	❑
Other	❑	❑	❑	❑	❑	❑	❑
Other.....	❑	❑	❑	❑	❑	❑	❑

* not covered by REACH

Reasons for product group with greatest need for improvement: ....

G) Which specific **target groups** within "the" consumers have a special need for information which has not been satisfied at all up to now or only inadequately:

o None
o .....; Reasons:
o .....: Reasons:

H) What **importance have the following information components had up to now** for "the" consumers (in relation to risk communication on chemicals):

	Very high	High	Moderate	Little	Very little	None at all	No information
Hazard symbols [7]	❑	❑	❑	❑	❑	❑	❑
Safety instructions ("S phrases")	❑	❑	❑	❑	❑	❑	❑
Risk instructions ("R phrases")	❑	❑	❑	❑	❑	❑	❑
Product label[1]	❑	❑	❑	❑	❑	❑	❑
Data sheets [2]	❑	❑	❑	❑	❑	❑	❑
Databases on the Internet Which ones? [3]	❑	❑	❑	❑	❑	❑	❑
Product test magazines	❑	❑	❑	❑	❑	❑	❑
Further training [4]	❑	❑	❑	❑	❑	❑	❑
Vocational training [5]	❑	❑	❑	❑	❑	❑	❑
General education [6]	❑	❑	❑	❑	❑	❑	❑
Other	❑	❑	❑	❑	❑	❑	❑
Other	❑	❑	❑	❑	❑	❑	❑

[1] e.g. Blauer Engel, Emicode
[2] Prior safety data sheets of the manufacturers, technical instructions
[3] e.g. the former Chemical information system for consumer-relevant substances (CIVS) of BgVV
[4] e.g. evening classes: shopping guides
[5] with a link to chemistry, biology, medicine, environment
[6] Chemistry/biology/physics lessons, natural phenomena/sciences
[7] according to the Dangerous Substances Ordinance

Reasons for most important component:

Reasons for least important component:

I) Which of the following **information components should be extended/introduced**:

	Extremely important	Very important	Important	Less important	Not important at all	No information
Hazard symbols [0]	❑	❑	❑	❑	❑	❑
Safety instructions ("S phrases")	❑	❑	❑	❑	❑	❑
Hazard instructions ("R phrases")	❑	❑	❑	❑	❑	❑
Product label [1]	❑	❑	❑	❑	❑	❑
REACH label **(new?)**	❑	❑	❑	❑	❑	❑
Full declaration of the ingredients on the packaging (like for cosmetics) **(new?)**	❑	❑	❑	❑	❑	❑
Data sheets [2]	❑	❑	❑	❑	❑	❑
Information sheets for consumers for instance for citizence advice bureaus, shops **(new?)**	❑	❑	❑	❑	❑	❑
Product test magazines	❑	❑	❑	❑	❑	❑
Databases on the Internet new? [3]	❑	❑	❑	❑	❑	❑
Book **(new?)**	❑	❑	❑	❑	❑	❑
Further training [4]	❑	❑	❑	❑	❑	❑
Vocational training [5]	❑	❑	❑	❑	❑	❑
General education [6]	❑	❑	❑	❑	❑	❑
Other	❑	❑	❑	❑	❑	❑
Other	❑	❑	❑	❑	❑	❑

[0] according to the Dangerous Substances Ordinance
[1] e.g. Blauer Engel, Emicode
[2] Prior safety data sheets of the manufacturers, technical instructions
[3] e.g. the former Chemical information system for consumer-relevant substances (CIVS) of BgVV
[4] e.g. evening classes: shopping guides
[5] With a reference to chemistry, biology, medicine, environment
[6] Chemistry/biology/physics lessons, natural phenomena/sciences

I a) *Reasons* for modules with the greatest need for extension/introduction:.....

I b) *Details* for the component with the greatest need for extension/introduction (as long as this is not labelling, information sheet or database, for this see bleow): .....

In-depth questions on selected information components

A) Label and labelling

J) Do you believe the **introduction of a "REACH-compatible"** label would be a good thing for consumers ("REACH label“)?

Yes	Probably	Yes and no	Probably not	No
O	O	O	O	O

No information: O
Reasons for this opinion: ....

K) Do you believe the **extension of the "Blauer Engel" system** would be helpful with a view to the health hazards and chemicals in public products?

Yes	Probably	Yes and no	Probably not	No
O	O	O	O	O

No information: O
Reasons for this opinion: ....

L) What opportunities and risks do you see from the planned introduction of GHS (Globally Harmonized System of Classification and Labelling of Chemicals)?

M) Do you believe a **full declaration** is necessary for products containing substances classified as dangerous?

Yes	Probably	Yes and no	Probably not	No
O	O	O	O	O

No information: O
Reasons for this opinion: ...

B) Information sheets for consumers

N) Do you think that the introduction of substance-based information sheets providing information on hazards/risks (in shops) is

N a) ... **desirable** from the consumer angle

Yes	Probably	Yes and no	Probably not	No
O	O	O	O	O

No information: O

N b) ... **practicable**

Yes	Probably	Yes and no	Probably not	No
O	O	O	O	O

No information: O

Comments:

O) **Where** should the information sheets be made available?

	Yes	No	No information
Shops	❑	❑	❑
Citizens advice bureaus	❑	❑	❑
Public institutions (municipal authorities...)	❑	❑	❑
Other	❑	❑	❑

P) How **long** should the information sheets be?

o Number of DIN A4 pages:
o No information

Q) Should the **information sheets** be **substance or product-based**?

o Substance-based
o Product-based
o No information

R) **What information** should be contained in these information sheets?

S) For **which product areas** should work commence on putting together information sheets of this kind?

C) Public information system on the Internet for consumers (easily comprehensible database)

T) Do you believe that a public information system on the Internet for consumers is
T a) ... **desirable** from the consumer angle

Yes	Probably	Yes and no	Probably not	No
O	O	O	O	O

No information: O

T b) ... **practicable**

Yes	Probably	Yes and no	Probably not	No
O	O	O	O	O

No information: O

Comments:

U) On **what data** should an information system of this kind mainly draw?

o "Helsinki“ database

o Other ....

o No information

Comments:

V) **Who** should **set up**/**maintain** a system of this kind?

W) Should the information be available on **substances or products**?

o Substances

o Products

o No information

X) **What information** should be contained in the information system?

Y) For **which product areas** should work commence on building up an information system of this kind?

Opportunities and risks through REACH

Z 1) What **opportunities** do you see through **REACH** for improving consumer information on consumer health protection using the following criteria (1 to 6, major opportunities, no opportunities at all):

	Very considerable	Considerable	Moderate	Small	Very small	No information
Data accessibility	❑	❑	❑	❑	❑	❑
Transparency	❑	❑	❑	❑	❑	❑
Comprehensibility	❑	❑	❑	❑	❑	❑
Up-to-dateness	❑	❑	❑	❑	❑	❑
Trustworthiness	❑	❑	❑	❑	❑	❑
Risk avoidance	❑	❑	❑	❑	❑	❑
Other	❑	❑	❑	❑	❑	❑

Reasons for the opportunity given the highest rating:

Z 2) What **risks** do you see through **REACH** for improving consumer information on consumer health protection using the following criteria:

	Very considerable	Considerable	Moderate	Small	Very small	No information
Data accessibility	❑	❑	❑	❑	❑	❑
Transparency	❑	❑	❑	❑	❑	❑
Comprehensibility	❑	❑	❑	❑	❑	❑
Up-to-dateness	❑	❑	❑	❑	❑	❑
Trustworthiness	❑	❑	❑	❑	❑	❑
Risk avoidance	❑	❑	❑	❑	❑	❑
Other	❑	❑	❑	❑	❑	❑

Rerasons for the given the highest rating:

Do you see a (communication) approach for information whereby imported products would be subjected to less testing?

Thank you for taking part!

7 Annex B:

7.1 Product groups and applications in the Household Products Database of the National Library of Medicine

Table B-1: Product types, number of use categories and products in the category "Automotive"

Product type	Number of use categories	Number of products
Air Conditioner	1	1
Air Freshener	3	10
ATV (All-Terrain Vehicle)	1	1
Battery	1	3
Belts	1	3
Bicycle	1	1
Boat/Marine	9	17
Body	11	129
Brakes	3	20
Cleaner	1	1
Cooling System	3	11
Detailing	21	251
Diesel	1	4
Door lock	2	1
Electrical	4	12
Emissions	2	4
Engine	16	81
Fuel System & Air Intake	10	79
Gears	2	7
Grease/Lubricants	7	36
Motor Oil	5	38
Motorcycle	2	4
Other	3	16
Power Steering	2	8
Snowmobile	1	1
Tires	5	43
Transmission	3	11
Trim	2	7
Upholstery/Carpet	4	36
Wheels	2	28
Windows/Windshield	8	32
Summe	137	896

Table B-2: Product types, number of use categories and products in the category "DIY"

Product type	Number of use categories	Products
Additive	3	5
Adhesive	51	202
Anchoring	1	5
Blacktop	2	6
Carpet	1	3
Caulk	22	85
Ceiling	9	22
Cement/Concrete	12	63
Ceramic	1	1
Chandelier	1	1
Chimney	1	1
Cleaner	23	70
Colorant	1	6
Computer/TV Screens	1	1
Concrete	18	52
Crack filler	4	7
Crawling insects	1	1
Deck	4	7
Door lock	2	2
Drain	1	5
Driveway	2	9
Drywall-Wallboard	6	29
Drywell	1	1
Ducts	1	1
Electrical	3	6
Electronics	10	26
Engines, gears, locks	1	1
Fence	2	6
Finish	56	164
Finish Spray	3	4
Finish, Low VOC	1	1
Fireplace-Stove	1	1
Fixture, outdoor	1	1
Flashing/Roof	1	4
Floor	20	63
Foamboard	1	2
Foundation	1	4
Galvanizing Agent	1	2
Glass	2	2
Glass block	1	3
Glazing	2	8
Granite	1	1
Gravel	1	2
Grease	2	3
Grout	13	63
Indoor/Outdoor	1	1
Insulation	14	62
Joint Compound	3	15
Lacquer	1	2
limestone	1	1
Locks	2	3
Lubricant	8	20
Machinery/tools	1	1
Marine	2	2
Masonry	6	28
Masonry/Stone	4	13

Table B-2 contd.: Product type, number of use categories and products in the category "DIY

Product type	Number of use categories	Number of products
Metal	5	8
Metal surfaces	1	1
Moisture proof	1	1
Mortar	10	27
Other	1	12
Paint	17	320
Paint Brush	1	3
Paint Spray	7	99
Paint Thinner	5	7
Paint, Concrete	1	3
Paint, Low VOC	1	7
Paneling	2	3
Paver	1	1
Pipe	4	12
Plaster	7	57
Plastic	1	1
Plumbing	22	98
Polish	7	17
Porcelain	1	1
Porch	1	4
Prevent corrosion	1	2
Primer	32	111
Primer Spray	2	2
Primer, Low VOC	1	1
Protectant	2	3
Pump	1	1
Putty	5	27
Roof	6	27
Rust	1	1
Rust Proof/Remove	5	7
Rust Retarder	1	9
Rust, heat, corrosion	1	1
Rustproofing	1	1
Sand	1	2
Sealant	44	195
Sealer Stripper	6	17
Septic System	1	1
Septic Tank	1	4
Sewer	1	1
Solder	9	28
Spackle	4	17
Squeak eliminator	1	1
Stain	18	110
Stone	5	23
striper	1	1
Stripper	4	11
Stucco	3	14
Tile	17	82
Tileboard	1	1
Trim	2	2
Varnish	6	7
Wall	14	27
Wallpaper	2	4
Waterproofing	3	16
Wax	2	4
Weatherstripping	1	9

Table B-2 contd.: Product types, number of use categories and products in the category "DIY"

Product type	Number of use categories	Number of products
Welding	1	1
Window	2	16
Wood	34	182
Wood filler	1	2
Wood surfaces	1	1
Total	677	2754

Table B-3: Product types, number of use categories and products in the category "Indoor care"

Product type	Number of use categories	Number of products
Adhesive	21	84
Air Freshener	9	127
Anti-Static Spray	2	5
Audio Tape Player	1	1
Automatic Dishwashing	3	20
Barbeque grille	1	2
Bathroom	11	140
Bathroom & Kitchen	6	99
Bleach	1	21
Brass	1	8
Carpet	5	47
Carpet/Upholstery	2	3
Chandelier	1	2
Cleaner	58	590
Clothes Dryer	1	4
Compact Disk	1	1
Contact Cement	1	4
Copper	2	8
Decorative	3	12
Degreaser	2	31
Deodorizer	5	116
Detergent	5	101
Dishwash	7	36
Disinfectant	5	40
Drain	1	18
Electronics	11	29
Epoxy	3	15
Fabric	7	71
Fireplace	1	1
Floor	7	54
Furniture	12	138
Glass	2	34
Grout	2	21
Hobby/Crafts	1	3
Houseplant Care	5	14
Humidifier	1	5
Ink	2	148
Insecticide	13	97
Kitchen	19	145
Lamp oil/Lighter fluid	2	3
Laundry	13	180
Leather	2	28

Table B-3 contd.: Product types number of use categories and products in the category "Indoor care"

Product type	Number of use categories	Number of products
Markers	1	7
Masonry/Stone	1	2
Metal	3	31
Mildew	1	9
Mineral deposit	1	9
Oven	1	11
Paint	12	60
Paint, Spray	5	43
Pens	2	8
Polish	8	65
Prewash	1	4
Printer	3	116
Protective Coating	3	9
Purpose	0	
Rodenticide	1	3
Rust Remover	4	8
Seasonal	1	6
Septic Tank	1	5
Shoes/Boots	3	29
Silver	2	11
Soap	1	1
Spot/Stain Remover	4	30
Stain, Finish	9	78
Stainless Steel	1	11
Stripper	3	9
Tile	3	41
Toilet Bowl	1	53
Toner	1	33
Transparency marker	1	1
Upholstery	1	7
Varnish	1	2
VHS Video Head	1	1
Vinyl	2	2
Vinyl Flooring	1	2
Water Softener/Treatment	2	9
Wax	4	14
Windows	2	28
Wood	11	59
Total	361	3.323

Table B-4: Product types, number of use categories and products in the category "Hobby, craft"

Product type	Number of use categories	Number of products
Adhesive	26	74
Candle-making	3	50
Ceramics	11	29
Cleaner	12	27
Collage	1	1
Decorating	5	20
Decoupage	2	3
Dye	1	1
Electrical	3	3
Electronics	9	22
Epoxy	1	2
Fabric	8	32
Fixative	1	2
Flocking	1	1
Foam	1	1
Fogger	1	1
Foil	2	2
Furniture	1	2
Gesso	2	2
Glass	1	2
Glaze	12	30
Glitter	3	10
Jewelry	1	4
Leather	3	20
Lubricant	3	6
Metal	2	14
Modeling	3	4
Needlework	1	1
Paint	26	281
Paint Thinner	1	1
Paint/Finish	29	62
Paper	4	6
Papier Mache	1	1
Plaster	2	2
Plastic	3	16
Primer	2	4
Resin	1	1
Rubber	1	1
Sealant	7	8
Seasonal	1	5
Soap-making	4	30
Solder	4	13
Stain	10	77
Stenciling	4	8
Tire sealer/inflator	1	1
Varnish	1	4
white out	1	1
Wood	6	15
Wood filler	1	3
Total	230	906

Table B-5: Product types, number of use categories and products in the category "Yard"

Product type	Number of use categories	Number of products
Animal Repellent	8	20
Anti-transpirant	1	1
Barbeque grille	3	8
Blacktop	3	11
Cement/Concrete	12	74
Cleaner	9	42
Compost	1	1
Deck	2	6
Driveway	2	13
Erosion control	1	1
Fence	4	4
Fence Post	1	1
Fertilizer	20	158
Garden	16	36
Grout	7	17
Herbicide	4	30
Ice Melt	1	3
Insect Repellent	2	10
Insecticide	30	100
Actn Care	8	28
Actnmower	3	10
Lubricant	3	8
Marine	1	2
Masonry/Stone	4	12
Mortar	4	10
Paint	2	2
Patio Furniture	1	4
Pesticide	1	2
Pipe	1	2
Plant Care	14	28
Sand	1	2
Sealant	17	51
Sidewalk	3	6
Soil Amendment	4	7
Spa	5	8
Sprinkler	2	3
Stain	1	1
Swimming Pool	10	26
Tile	4	15
Trees	3	15
Weed Killer	2	19
Total	221	797

Table B-6: Product types, number of use categories and products in the categories "Cosmetics & Hygiene"

Product type	Number of use categories	Number of products
Babies & Kids	11	78
Bath/Shower Products	8	90
Body Makeup	1	1
Eye Care/Makeup	6	69
Eyecare/Makeup	1	1
Face Makeup	8	99
Fragrances	4	72
Hair Care	10	238
Hair Color	3	61
Manicuring Products	4	34
Men's Products	9	126
Oral Hygiene	5	75
Other	3	40
Personal Cleanliness	13	294
Skin Care	18	162
Total	104	1.440

Table B-7: Product type, number of use categories and products in the category "Pesticides"

Product type	Number of use categories	Number of products
Animal Repellent	8	20
Fungicide	12	79
Herbicide	17	72
Insect Repellent	5	65
Insecticide	41	494
Molluscicide	1	9
Rodenticide	2	15
Total	96	754

Table B-8: Product type, number of use categories and products in the category "Pets"

Product type	Number of use categories	Number of products
Cats	7	69
Dogs	7	74
Ferrets	2	7
Fish	7	68
Flea & Tick Control (indoor/outdoor)	2	28
Horses	2	14
Rabbits	2	3
Reptiles	2	2
Small Animals	10	45
Total	41	310

Table B-9: Product type, number of use categories and products in the category "Home office"

Product type	Number of use categories	Number of products
Adhesive	4	5
Cleaner	3	5
Fixative	1	2
Foamboard	0	0
Ink	2	149
Markers	1	5
Paint	1	2
Paper	0	0
Pens	3	4
Printer	3	122
striper	0	0
Stripper	1	1
Toner	1	33
Transparency marker	1	2
Total	21	330

8 List of figures

9 List of tables

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