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The occurrence of Carcinogenic, Mutagenic and Reprotoxic (CMR) substances in consumer preparations

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Abstract

The general public is protected from the effects of Carcinogenic, Mutagenic and Reprotoxic (CMR) substances partly by banning the sale of preparations containing classified CMR substances (Annex I of 67/548/EEC) at levels above the limit concentration for exposure of the general public. It is therefore important that consumer preparations are checked for the presence of these substances and that, in addition, potential CMR substances are assessed for inclusion in Annex I of 67/548/EEC. A search was made for potential CMR substances in electronically accessible databases, after which a list of 514 potential CMR substances not found in Annex 1 could be compiled. The occurrence of CMR category 1 and 2 substances, and of additional potential CMR substances, in consumer preparations was checked against the SPIN database, an initiative of the Nordic countries. A total of 146 Annex I substances for the CMR categories 1 and 2, and 24 potential CMR substances were found to be present in consumer preparations used in the Nordic countries. It cannot be ruled out that these substances will also be present in consumer preparations used in the Netherlands. A quantitative estimate of the potential exposure to CMR substances was not possible due to the lack of an adequate database of consumer preparations showing actual concentrations.

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Samenvatting

Bescherming van de algemene bevolking tegen de gezondheidsnadelige effecten van carcinogene, mutagene en reproductietoxische stoffen (CMR stoffen) wordt mede gerealiseerd door een verbod op de verkoop van consumentenpreparaten met te hoge gehalten aan CMR categorie 1 en 2 stoffen (Annex I van 67/548/EEG). Het is derhalve belangrijk dat zowel inzicht wordt verkregen in de volledigheid van deze lijst als in het voorkomen van dergelijke stoffen in consumentenpreparaten. Hiertoe werd gezocht naar elektronisch toegankelijke databestanden met lijsten van (mogelijke) CMR stoffen (in aanvulling op de Annex I) of met informatie over het voorkomen van dergelijke stoffen in consumentenpreparaten. Het onderhavige project had als doel lijsten op te stellen van: a) potentiële CMR stoffen in aanvulling op CMR categorie 1 en 2 stoffen van Annex I, b) CMR categorie 1 en 2 stoffen en potentiële CMR stoffen die voorkomen in consumentenpreparaten en c) consumentenpreparaten die in belangrijke mate bijdragen aan de blootstelling van de Nederlandse bevolking aan (potentiële) CMR stoffen.

Op basis van diverse databestanden van (inter)nationale organisaties en instituten kon een lijst worden opgesteld van 514 potentiële CMR stoffen die niet op Annex I voorkomen. Het enige elektronisch toegankelijke databestand die geschikt was om het voorkomen van CMR stoffen te analyseren is het SPIN databestand, een initiatief van de Scandinavische landen. Op basis van dit bestand bleken 24 van de 514 potentiële CMR stoffen voor te komen in consumentenpreparaten.

De aanwezigheid van CMR categorie 1 en 2 stoffen in consumentenpreparaten werd eveneens geanalyseerd aan de hand van het SPIN databestand. In totaal 146 van deze stoffen bleken voor te komen in consumentenpreparaten. Hoewel het SPIN databestand is gebaseerd op gegevens uit de Noord-Europese landen, kan worden aangenomen dat het bestand redelijk representatief is voor de Nederlandse situatie. Het kan derhalve niet worden uitgesloten dat ook in Nederland CMR stoffen voorkomen in consumentenpreparaten.

Ook het SPIN databestand geeft geen informatie over de daadwerkelijke gehalten van stoffen in consumentenpreparaten. Derhalve kan geen kwantitatieve analyse worden uitgevoerd en kan niet worden aangegeven welke preparaten een belangrijke bijdrage leveren aan de blootstelling van de Nederlandse bevolking aan CMR stoffen.

Summary

The general public is protected from the effects of Carcinogenic, Mutagenic and Reprotoxic (CMR) substances partly by banning the sale of preparations containing classified CMR substances (Annex I of 67/548/EEC) at levels above the limit concentration for exposure of the general public. It is therefore important that consumer preparations are checked for the presence of these substances and that, in addition, potential CMR substances are assessed for inclusion in Annex I of 67/548/EEC. A search was made for potential CMR substances in electronically accessible databases. The aim of the project was to compile the following lists: a) a list of potential CMR substances supplementary to category 1 and 2 substances, b) a list of classified or potential CMR substances that may occur in consumer preparations, and c) a list of consumer preparations that may significantly contribute to the exposure of the Dutch population to CMR substances.

A list of 514 potential CMR substances not on Annex 1 remained. The only database found to be easily electronically accessible and adequate to search for information about the occurrence of CMR substances in consumer products was the SPIN database, an initiative of the Nordic countries. Based on this database only 24 out of the 514 potential CMR substances appeared to occur in consumer products.

Also, the presence of already classified CMR category 1 and 2 substances in preparations was checked by comparing the list of Annex I CMR category 1 and 2 substances with the data derived from the SPIN database. A list of 146 substances remained. Although, the SPIN database is based on data from the Nordic Countries, it may be assumed that these data will also be representative for the situation in the Netherlands. It can therefore not be ruled out that Annex I CMR category 1 and 2 substances will also be present in consumer preparations used in the Netherlands.

No adequate database containing data on actual concentrations of classified or potential CMR substances in consumer preparations were available. Therefore, a list of consumer preparations that may significantly contribute to the exposure of the Dutch population to CMR substances could not be compiled.

1. Introduction

The human population in the Netherlands is exposed to many substances through the use of consumer preparations. Among these substances specific attention is paid towards substances with carcinogenic (C) or mutagenic (M) properties or which are toxic to reproduction (R): the so-called CMR substances. Clear insight in the occurrence of CMR substances in consumer preparations is lacking. It is unknown to the authorities whether all preparations sold to the general public are free of CMR substances category 1 and 2 at levels above the limit concentration because the composition and classification data of preparations are only known for a part of all preparations. Further, the available data are inaccessible to other authorities then those who are collecting these data because of confidentiality. The Ministry of Health, Welfare and Sport (VWS) has need for insight in the potential consumer exposure to classified and potential CMR substances. The protection of consumers against the effects of harmful substances and preparations is regulated in the Dangerous Substances Act (Wet Milieugevaarlijke Stoffen: WMS). This law is based on the directives 67/548/EEC (Classification and Labelling) and 88/379/EEC (Preparation Directive). The hazard of substances and preparations is classified in categories for physical/chemical, health and environmental effects. Those substances for which these properties have been assessed are classified under directive 67/548/EEC and listed on Annex I of this directive. CMR substances are classified into three categories or not classified for CMR properties. Category 1 and 2 substances are known human CMR substances or substances that should be regarded as CMR substances. Category 3 substances are suspected of having CMR properties, but the available data are insufficient either to classify the substance in category 1 or 2 or to conclude that no classification is needed.

This classification is either done by Industry or based on a list of classified substances (Annex I of 67/548/EEC). Following the implementation of 76/769/EEC into the WMS, it is forbidden to sell CMR substances or preparations containing CMR substances category 1 and 2, as specified in an Annex to 76/769/EEC, above the general (as laid down in directive 88/379/EEC) or specific (as given in the Annex) concentration limits to the general public.

Therefore, protection against the adverse effects of CMR substances depends on the inclusion of the substances in Annex I or self-classification by Industry. However, only a relatively limited number of chemicals are tested for CMR endpoints and it can freely be assumed that not all chemicals that tested positive for CMR endpoints are included in Annex I. It is therefore advisable to gain insight not only in the potential exposure to classified CMR substances (i.e. category 1 and 2 substances) but also to potential CMR substances not included in Annex I. Following the category definition above, all category 3 substances can be regarded as potential CMR substances. This list can be extended with substances not listed on Annex I but that may have been classified as potential CMR substance by other organisations (e.g. by IARC) and listed as such.

The present project was aimed at composing lists of a) potential CMR substances supplementary to category 1 and 2 substances, b) a list of classified or potential CMR substances that may occur in consumer preparations, and c) a list of consumer preparations that may significantly contribute to the exposure of the Dutch population to CMR substances. The project was divided into two phases. The first phase consisted of a feasibility study to identify possible lists of potential CMR substances and databases or product registers that were electronically accessible and easily analysable. The practicability of these sources of information for answering the above questions was discussed with the Ministry of VWS and the plan for the second phase was drawn up in consultation. The second phase was aimed at the composition of the desired lists including a search for the presence of classified or potential CMR substances in preparations sold to the consumer.

Within this document substances are defined as described in the preparations directive 1999/45/EU:
'substances' means chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the products and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

In the same directive, preparations are defined as:
'preparations' means mixtures or solutions composed of two or more substances.

This directive does not define products and/or articles. Within this document, products and/or articles are defined as all combinations of substances which are not a preparation.

A search for the presence of CMR substances in products and/or articles was not within the scope of the assignment.

2. Methods

2.1 Compilation of the lists of CMR substances

2.1.1 List of classified CMR substances

The classified substances were obtained from the N-class database (http://www.kemi.se/nclass/default.asp). Only information regarding CAS-number, substance name, classification and source were retained for each entry. Three selected groups of substances were downloaded. The first selection consisted of all substances in the N-class database (List of Annex I substances). The second group contained all substances with one or more of the following R-sentences R40, 45, 46, 49, 60, 61, 62, 63 and 68 (List of CMR substances). This group included category 1, 2, and 3 substances. The last selection concerned all substances with one or more of the following R-sentences R45, 46, 49, 60 and 61 (list of CMR cat. 1 and 2 substances).

2.1.2 Additional list of CMR substances

The internet was searched for electronically accessible databases and focused on lists of carcinogenic substances, mutagenic substances and substances toxic to reproduction. The sites were checked for containing or referring to a list of substances. Also, the websites of several well-known organisations working on carcinogenic, mutagenic or substances toxic to reproduction were visited and searched for lists of substances. Additional lists were obtained through contacts with members of the EU-working group for classification and labelling. Lists were only acceptable if a description of the inclusion criteria was available, and the list contained the CAS-numbers of the substances. A further restriction was that only lists in Dutch, English, or German were used. Considering the large number of substances involved the project was restricted to lists of substances that could be easily downloaded and were electronically analysable. No searches were made on individual substances.

2.1.3 Compilation of the list of potential CMR substances

Category 3 substances can be regarded as potential CMR substances, but the available data are insufficient to classify into category 1, 2 or no classification. Therefore, all CMR category 3 substances are potential Category 1 or 2 CMR substances. The availability of new data for some of the CMR category 3 substances in Annex I was recently investigated by the ECB (Summary record of the meeting of the Commission Working Group on the Classification and Labelling of Dangerous Substances in Ispra at 15-17 January 2003, ECBI/30/03). Some new data were found but in general did not suggest reconsideration of the current classification. It was concluded that these substances were sufficiently evaluated and that further evaluation would not be useful, even if such a substance would occur on an additional list. The category 3 substances were therefore excluded from the list of potential CMR substances.

All selected lists of CMR substances, including Annex I CMR substances, were downloaded from the internet and imported into an Excel worksheet. Entries without CAS-number and radioactive substances were removed. Only information regarding CAS-number, substance name, classification and source were retained for each entry. All databases were combined and sorted according to the CAS-number. All substances present on Annex I were removed. The remaining list was subsequently checked for entries that fall under a general entry in Annex I but are listed with the individual CAS-number in one of the other lists. These substances were also removed. The resulting list contained the potential CMR substances.

2.2 Product registers

The internet was searched for electronically accessible product registers that could be easily downloaded and analysed. No restrictions were used at this stage because it was unknown whether any product registers would be available at all. Databases or product registers that require entry of individual substances will be presented but not analysed. Analyses of these databases would be too labour-intensive and is beyond the scope of the present project.

Only one database met the preconditions of the present project, the SPIN database (Substances in Preparations In the Nordic countries). All substances used in consumer preparations were selected in the SPIN database and downloaded. All multiple entries were reduced to a single entry. Lists of potential and classified CMR substances in the SPIN database were made by selecting the substances that were available in both databases based on CAS-number.

3. Results

3.1 Lists of (potential) CMR substances

The available databases containing CMR substances are described in Table 1. The first two databases contain the currently classified substances. The N-class database was used to compile the necessary lists of classified substances because this database is CAS-number orientated whereas the database on the ECB site is orientated towards Annex 1 numbers. For example, the ECB database contains one entry for several salts of a metal without a CAS-number but the N-class contains several individual salts of that metal with their respective CAS-numbers. All other databases in table 1 were used as sources of potential CMR substances with the exception of the last 4. Two of these three databases are most likely comparable to Annex I and the third database did not contain CAS-numbers and an explanation of how the substances were obtained was not available. The UCLID database could not be used because the classification proposed by Industry could not be obtained from the database in an easily accessible way. The list of potential CMR substances was compiled as described in Chapter 2. Combination of all selected sources of potential CMR substances and removal of all substances already included in Annex I resulted in a list of 618 potential CMR substances. However, several substances could be removed because they were already classified on Annex I under a general CAS-number (for example several individual PCB's). The final list of 514 potential CMR substances is presented in Appendix 1.

3.2 Choice of product register

A total of 8 product registers was found of which only 3 were electronically accessible. Most product registers cannot be used to determine the occurrence of classified or potential CMR substances in consumer preparations because of confidentiality of the information. Other databases were unsuitable because they did not contain a CAS-number (Swiss database) or cannot be downloaded (US-database). The only electronically available product register that was practically suitable for the present purpose was the SPIN database (Substances in Preparations In the Nordic countries) (Table 2). This database is described into more detail in Appendix 2; all other databases that were found are summarised in Appendix 3. It is noted that the information in the SPIN database refers to chemical products only, articles are not included.

The SPIN database can be searched by CAS-number and indicates whether specific substances are present in consumer preparations. However, products are grouped into use categories and no distinction is made between professional use and consumer preparations.

Further, the database does not provide actual substance concentrations in preparations. Therefore, a list of consumer preparations that may significantly contribute to the exposure of the Dutch population to CMR substances cannot be compiled. A list of substances used in consumer preparations could be extracted from the SPIN database. This list was used to determine whether known or potential CMR substances were present in consumer preparations.

3.3 Lists of classified and potential CMR substances occurring in consumer preparations

Comparison of the list of classified CMR substances and the list of substances used in consumer preparations according to the SPIN database resulted in a list of 146 substances (Appendix 4). A similar comparison of the list of potential CMR substances resulted in a list of 24 substances (Appendix 5)

Table 1. Databases of CMR substances.

Name	Organisation	Description	Source	Version
Annex I of 67/548/EEG	European Chemical Bureau	Classification of substances according to 67/548/EEG	http://ecb.jrc.it/classification-labelling/	Including 28th ATP
N-class database	Swedish National Chemicals Inspectorate	Classification of substances according to 67/548/EEG	http://www.kemi.se/nclass/default.asp	Including 28th ATP
IARC Monographs Database on Carcinogenic Risks to Humans	International Agency for Research on Cancer	Classification of substances into 4 groups: known human carcinogens (1), probably or possible carcinogenic to humans (2a, 2b), not classifiable (3), probably not carcinogenic to humans (4).	http://monographs.iarc.fr/monoeval/grlist.html	Updated 4 December 2002.
Lijst met kankerverwekkende stoffen als bedoeld in het arbeidsomstandighedenbesluit.	Ministerie van Sociale Zaken en Werkgelegenheid	List of carcinogenic substances including Annex I substances plus additional substances assessed by the Health Council of the Netherlands (Gezondheidsraad)	http://home.szw.nl/navigatie/rubriek/dsp_rubriek.cfm?rubriek_id=2&subrubriek_id=205&link_id=23083	2003
Lijst met reproductietoxische stoffen als bedoeld in het arbeidsomstandighedenbesluit.	Ministerie van Sociale Zaken en Werkgelegenheid	List of reprotoxic substances including Annex I substances plus additional substances assessed by the Health Council of the Netherlands (Gezondheidsraad)	http://home.szw.nl/navigatie/rubriek/dsp_rubriek.cfm?rubriek_id=2&subrubriek_id=205&link_id=23083	2003
10th report on carcinogens	National Toxicology Program	List of carcinogens divided in known human carcinogens and reasonably anticipated to be human carcinogens	http://ehp.niehs.nih.gov/roc/toc10.html	10th report
Reproductive toxicants	Scorecard (part of environmental defense)	List of reprotoxic substances based on several references listed on the website	http://www.scorecard.org/health-effects/chemicals.tcl?full_hazard_name=Reproductive%20Toxicity&all_p=t	Undated, as available in 2003
Developmental toxicants	Scorecard (part of environmental defense)	List of developmental substances based on several references listed on the website	http://www.scorecard.org/health-effects/chemicals.tcl?full_hazard_name=Developmental%20Toxicity&all_p=t	Undated, as available in 2003
Carcinogens	Scorecard (part of environmental defense)	List of carcinogens based on several references listed on the website	http://www.scorecard.org/health-effects/chemicals.tcl?full_hazard_name=Cancer&all_p=t	Undated, as available in 2003
Niosh carcinogen list	Nationale Institute of Occupational Safety and Health	List of carcinogenic substances without a description of source	http://www.cdc.gov/niosh/npotocca.html	Undated, as available in 2003
TRGS 905	Bundesministerium fur Arbeit und Socialordnung	List CMR substances classified by the "Ausschuss fur Gefahrstoffe" using the same criteria as EEG/67/548.	http://www.baua.de/prax/ags/trgs905.pdf	March, 2003
Verzeichnis krebserzeugender, erbgutverandernder oder fortpflanzungsgefahrdender Stoffe	Bundesministerium fur Arbeit und Socialordnung	List CMR substances classified by the "Ausschuss fur Gefahrstoffe" using the same criteria as EEG/67/548.	http://www.baua.de/prax/ags/verz_905.pdf	April, 2003
Approved Supply List	Health and Safety Executive	Probably comparable to Annex I	List only available as a book	Seventh edition, 2002
International Uniform ChemicaL Information Database (IUCLID)	European Chemicals Bureau	IUCLID is the basic tool for data collection and evaluation within the EU-Risk Assessment Programme. It includes the industrie proposal for classification and labelling	Non-confidential DC-ROM	Year 2000 edition
List of Designated Hazardous Substances	National Occupational Health and Safety Commission	Probably based on Annex I, using the same R and S-sentences	http://www.nohsc.gov.au/OHSInformation/Databases/HazardousSubstances/default.asp?inp=showsub&subid=1228	1999
List of suspected reprotoxic substances	"Chemiewinkel" of the University of Wageningen	Based on literature study.	http://www.wau.nl/amd/manual/appendix/manual_appendix_reprotoxic.htm	Undated, as available in 2003

Table 2. The SPIN database (Substances in Preparations In the Nordic Countries).

Administrative position	**Nordic Chemicals Group**
Language	English
Website online search	http://www.spin2000.net/spin.html
Registered products	From the product registers of the Nordic countries
Exemptions of declaration	Only non-confidential information
Percentage of al chemical products registered	Unknown Information on 18000 substances in preparations
Information on composition	Detailed information may be provided on request
Chemical identification by CAS-number	Yes
Information on classification of constituents (R-phrases)	No
Updating	Annually
Information on the function of the substance in the product	No
Information on use of chemicals for non-occupational purposes	Yes
Use of data	On-line search or CD
Contact for information	Toralf Kaland Toralf.kaland@sft.no + 47 22 67 67 06 P.O. box 8100 Dep, N-0032 Oslo, Norway

4. Discussion

4.1 List of potential CMR substances

Protection of the general public to the effects of Carcinogenic, Mutagenic and Reprotoxic (CMR) substances is partly realised by banning the sale of preparations containing CMR category 1 and 2 substances above the limit concentration to the general public. Unfortunately, there is no list of substances that are evaluated under the scope of 67/548/EEC for CMR properties and for which the available database was sufficiently adequate to conclude that they did not possess a hazard. Hence, the absence of a substance on Annex I can either mean that the substance has not been evaluated or that the substance has been evaluated but that classification was not warranted. This difference cannot be determined from Annex I. It was assumed that all substances in Annex I that are not classified for CMR endpoints have been fully assessed on all available data and that the data did not warrant classification for CMR endpoints. Therefore, all Annex I substances were excluded from the list of potential CMR substances. But it cannot be excluded that some substances for which it was concluded that they did not possess any potency for CMR activity nor a potency for other classification endpoints are present in the list of potential CMR substances.

Further, the final list of potential CMR substances also contains substances that are excluded from Annex I because they are regulated by other laws. Examples of these are medicines and veterinary medicines. Other substances on the list are naturally occurring substances, such as aflatoxins, or substances which are not produced but only formed as impurities or during combustion of waste, such as the various dibenzodioxins and dibenzofurans. It is very unlikely that these substances are present in concentrations above 0.1% in preparations. Other substances are already included in the 29th ATP of 67/548/EEC. Finally, some substances on the list are already discussed in the Working Group on the Classification and Labelling or will be discussed in the near future because they are included in one of priority lists of existing substances. Removal of these substances from the list of potential CMR substances was not part of this project.

It can be assumed that the final list of 514 potential CMR substances (Appendix 1) will contain substances with probably sufficient data to evaluate inclusion in Annex I.

4.2 Presence of classified CMR substances in consumer preparations.

A list of 146 classified CMR substances used in consumer preparations (Appendix 4) was made based on the Annex I CMR category 1 and 2 substances in the N-class database combined with the list of substances used in consumer preparations according to the SPIN database. The latter list extracted from SPIN, is not a complete list because the registration in the Nordic countries is not complete (Appendix 2) for several reasons. The relevance of this list for the Netherlands can be expected to be high because the Netherlands and the Nordic countries are part of the EU and there is an extensive trade of chemicals and chemical preparations between these countries. However, as the SPIN database contains only information from 1999, 2000 and 2001, it can not be excluded that some preparations containing CMR substances are already withdraw from the market.

More than half of the classified CMR substances used in consumer preparations are petroleum preparations. All these substances are classified with R45 because of the presence of polycyclic aromatic hydrocarbon impurities which are known carcinogens The same is true for some small hydrocarbon gases contaminated with butadiene.

Specific information on the chemical composition of these preparations is not available in the SPIN database. However, information on the use categories is available in the online version of the SPIN database. Also, further information may be available in the Swiss and US databases, because these databases contain information on the chemical composition of individual preparations. However, individual substances have to be entered one-by-one (US database) or searched for in a list of substances (Swiss database) to retrieve this information. This labour-intensive work is beyond the scope of the present project. However, examples of the results of the search for additional information in these databases are provided for 2-ethoxyethanol, benzene, and trichloroethylene in Appendix 6, 7 and 8 to illustrate the possibilities of these databases. This information can be used to determine the type of preparations in which the substance is used.

It can be concluded that it is likely that classified CMR substances are used in consumer preparations. However, information on concentration and specific preparations could not be found because in most databases the chemical composition of the preparations is confidential.

4.3 Presence of potential CMR substances in consumer preparations.

A list of 24 potential CMR substances used in consumer preparations (Appendix 5) was based on the list of potential CMR substances and the list of substances used in consumer preparations according to the SPIN database. The above mentioned remarks about the SPIN database also hold for the list of potential CMR substances.

Further information on the type of preparations in which these substances are used can be determined from the Swiss, US and SPIN databases, as described above.
Several substances on the list are different kinds of crystalline silica. The inclusion of these substances is based on the development of lung cancer after respiratory exposure. However, this will also depend on the size of the particles. No other groups of substances can be recognised within this list.

Several of the potential CMR substances are likely to be used in consumer preparations. This information can be used to prioritise the evaluation of the potential CMR substances.

4.4 List of consumer preparations containing (potential) CMR substances

A list of consumer preparations that may significantly contribute to the exposure of the Dutch population to CMR substances could not be compiled from the available databases. Specific information on the chemical composition of these preparations is not available in the SPIN database. However, information on the use categories is available in the online version of the SPIN database. Also, further information may be available in the Swiss and US databases, because these databases contain information on the chemical composition of individual preparations. However, individual substances have to be entered one-by-one (US database) or searched for in a list of substances (Swiss database) to retrieve this information. This labour-intensive work is beyond the scope of the present project. However, examples of the results of the search for additional information in these databases are provided for 2-ethoxyethanol, benzene and trichloroethylene in Appendix 6, 7, and 8 to illustrate the possibilities of these databases. This information can be used to determine the type of preparations in which the substance is used.

No data on actual concentrations of classified or potential CMR substances in consumer preparations was available Therefore, a list of consumer preparations that may significantly contribute to the exposure of the Dutch population to CMR substances could not be compiled.

Appendix 1 List of potential CMR substances

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
1162-65-8	AFB1			carcinogenic						
7220-81-7	AFB2			carcinogenic						
1165-39-5	AFG1			carcinogenic						
7241-98-7	AFG2			carcinogenic						
13909-09-6	1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea (MeCCNU)	Carc. Cat. 1	K carcinogenic[1]	carcinogenic				carcinogenic		
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD); “Dioxin”	Carc. Cat. 1	K carcinogenic	carcinogenic			developmental	carcinogenic	Carc. Cat. 1	carcinogenic
13552-44-8	4,4'-Methylenedianiline Dihydrochloride		R carcinogenic[2]					carcinogenic		
23214-92-8	Adriamycin® (Doxorubicin hydrochloride)	Carc. Cat. 2a	R carcinogenic			reproductive	developmental	carcinogenic		
1332-21-4	Asbestos	Carc. Cat. 1	K carcinogenic					carcinogenic		carcinogenic
446-86-6	Azathioprine	Carc. Cat. 1	K carcinogenic	carcinogenic			developmental	carcinogenic		
305-03-3	Chlorambucil	Carc. Cat. 1	K carcinogenic	carcinogenic			developmental	carcinogenic		
14464-46-1	Cristobalite (See Silica, Crystalline [Respirable Size])		K carcinogenic	carcinogenic						carcinogenic
59865-13-3	Cyclosporin A		K carcinogenic					carcinogenic		
13654-09-6	Decabromobiphenyl (See Polybrominated Biphenyls)		R carcinogenic				developmental	carcinogenic		
66733-21-9	Erionite	Carc. Cat. 1	K carcinogenic							
148-82-3	Melphalan	Carc. Cat. 1	K carcinogenic	carcinogenic			developmental	carcinogenic		
505-60-2	Mustard Gas	Carc. Cat. 1	K carcinogenic	carcinogenic				carcinogenic		
134-29-2	o-Anisidine Hydrochloride		R carcinogenic					carcinogenic		
61288-13-9	Octabromobiphenyl (Under Polybrominated Biphenyls)		R carcinogenic							
14808-60-7	Quartz (See Silica, Crystalline [Respirable Size])	Carc. Cat. 1	K carcinogenic	carcinogenic						carcinogenic
1314-20-1	Thorium Dioxide		K carcinogenic					carcinogenic		
15468-32-3	Tridymite (See Silica, Crystalline [Respirable Size])		K carcinogenic	carcinogenic						carcinogenic
59122-46-2	(+-)-methyl (1r,2r,3r)-3-hydroxy-2-((e)-(4rs)-4-hydroxy-4-methyl-1-						developmental			

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
	octenyl)-5- -oxocyclopentaneheptanoate									
13927-77-0	(dibutyldithiocarbamato)nickel(ii)							carcinogenic		
13010-47-4	1-(2-chloroethyl)-3-cyclohexyl-1-nitrosourea	Carc. Cat. 2a	R carcinogenic	carcinogenic			developmental	carcinogenic		
116-14-3	1,1,2,2-tetrafluoroethylene	Carc. Cat. 2b	R carcinogenic					carcinogenic		
87-68-3	1,1,2,3,4,4-hexachlor-1,3-butadien								Carc. Cat. 3	carcinogenic
75-38-7	1,1-difluorethen (r 1132a)								Carc. Cat. 3	
39001-02-0	1,2,3,4,6,7,8,9-octachlorodibenzofuran							carcinogenic		
67562-39-4	1,2,3,4,6,7,8-heptachlorodibenzofuran							carcinogenic		
35822-46-9	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin							carcinogenic		
55673-89-7	1,2,3,4,7,8,9-heptachlorodibenzofuran							carcinogenic		
39227-28-6	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin							carcinogenic		
67517-48-0	1,2,3,4,8-pentachlorodibenzofuran							carcinogenic		
57117-44-9	1,2,3,6,7,8-hexachlorodibenzofuran							carcinogenic		
57653-85-7	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin							carcinogenic		
19408-74-3	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin							carcinogenic		
57117-41-6	1,2,3,7,8-pentachlorodibenzofuran							carcinogenic		
40321-76-4	1,2,3,7,8-pentachlorodibenzo-p-dioxin							carcinogenic		
71888-89-6	1,2-Benzoldicarbonsaure, Di-C6-8-verzweigte Alkylester, C7-reich								Fert. Cat. 3 Dev. Cat. 2	
68515-42-4	1,2-Benzoldicarbonsaure, Di-C7-11-verzweigte und lineare Alkylester								Fert. Cat. 3 Dev. Cat. 2	
68515-41-3	1,2-Benzoldicarbonsaure, Di-C7-9-verzweigte und lineare Alkylester								Dev. Cat. 3	
68515-43-5	1,2-Benzoldicarbonsaure, Di-C9-11 -verzweigte und lineare Alkylester								Dev. Cat. 3	
41683-62-9	1,2-Dichlormethoxyethan								Muta. Cat. 3	
1615-80-1	1,2-Diethylhydrazine	Carc. Cat. 2b						carcinogenic		
3296-90-0	1,3-dibromo-2,2-dimethylolpropane	Carc. Cat. 2b	R carcinogenic					carcinogenic		
8003-19-8	1,3-dichloropropene and 1,2-							carcinogenic		

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
	dichloropropane mixture									
55-98-1	1,4-butanediol dimethanesulfonate (myleran)	Carc. Cat. 1	K carcinogenic	carcinogenic			developmental	carcinogenic		
1633-83-6	1,4-butansulton								Carc. Cat. 3	
42397-64-8	1,6-dinitropyrene	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
42397-65-9	1,8-dinitropyrene	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
555-84-0	1-[(5-nitrofurfurylidene)-amino]-2-imidazolidinone	Carc. Cat. 2b						carcinogenic		
140-67-0	1-allyl-4-methoxybenzene							carcinogenic		
81-49-2	1-amino-24-dibromoanthraquinone							carcinogenic		
82-28-0	1-amino-2-methylanthraquinone		R carcinogenic					carcinogenic		
88-73-3	1-Chlor-2-nitrobenzol								Carc. Cat. 3 Fert. Cat. 3	
129-43-1	1-Hydroxyanthraquinone	Carc. Cat. 2b								
5522-43-0	1-NITROPYRENE	Carc. Cat. 2b	R carcinogenic					carcinogenic	Carc. Cat. 3	
7665-72-7	1-tert-Butoxy-2,3-epoxypropan								Muta. Cat. 3	
140-57-8	2-(p-tert-butylfenoxy)-isopropyl-2-chloor-ethylsulfiet	Carc. Cat. 2b		carcinogenic				carcinogenic		
306-83-2	2,2-Dichlor-1,1,1-trifluorethan (R 123)								Carc. Cat. 3	
57117-31-4	2,3,4,7,8-pentachlorodibenzofuran							carcinogenic		
51207-31-9	2,3,7,8-tetrachlorodibenzofuran							carcinogenic		
2687-25-4	2,3-diaminotoluene							carcinogenic		
3033-77-0	2,3-epoxypropyltrimethylammonium-chlorid								Carc. Cat. 2 Muta. Cat. 3	
1121-03-5	2,4-butansulton								Carc. Cat. 2	
636-23-7	2,4-diaminotoluene.2hcl							carcinogenic		
5409-83-6	2,8-dichlorodibenzofuran							carcinogenic		
53-96-3	2-acetylaminofluorene		R carcinogenic					carcinogenic		carcinogenic
68006-83-7	2-amino-3-methyl-9h-pyrido(23-b)indole	Carc. Cat. 2b						carcinogenic		
712-68-5	2-amino-5-(5-nitro-2-furyl)-1,3,4-thiadiazole	Carc. Cat. 2b						carcinogenic		
67730-11-4	2-amino-6-methyldipyrido(1,2-a:3',2'-d)imidazole	Carc. Cat. 2b						carcinogenic		
26148-68-5	2-amino-9h-pyrido (2,3-b) indole (a-alpha-c)	Carc. Cat. 2b						carcinogenic		
117-79-3	2-aminoanthraquinone		R carcinogenic					carcinogenic		
67730-10-3	2-amino-dipyrido(1,2-,2'-d)-	Carc. Cat. 2b						carcinogenic		

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
	imidazolea:3'									
153-78-6	2-Aminofluorene							carcinogenic		
151-67-7	2-Brom-2-chlor-1,1,1 -trifluorethan				R63		developmental		Dev. Cat. 2	
129-15-7	2-methyl-1-nitroanthraquinone (of uncertain purity)	Carc. Cat. 2b		carcinogenic				carcinogenic		
119-34-6	2-nitro-4-aminophenol							carcinogenic	Carc. Cat. 3	
607-57-8	2-nitroflourene	Carc. Cat. 2b		carcinogenic				carcinogenic		
5307-14-2	2-nitro-p-phenylendiamin								Carc. Cat. 3	
60153-49-3	3-(n-nitrosomethylamino)propionitrile	Carc. Cat. 2b						carcinogenic		
28434-86-8	3,3'-dichloro-4,4'-diaminodiphenyl ether	Carc. Cat. 2b						carcinogenic		
496-72-0	3,4-diaminotoluene							carcinogenic		
105735-71-5	3,7-dinitrofluoranthene	Carc. Cat. 2b						carcinogenic		
22506-53-2	3,9-dinitrofluoranthene	Carc. Cat. 2b						carcinogenic		
132-32-1	3-amino-9-ethylcarbazol								Carc. Cat. 3	
6109-97-3	3-amino-9-ethylcarbazole hydrochloride							carcinogenic		
56-49-5	3-methylchloranthrene							carcinogenic		
64091-91-4	4-(n-nitrosomethylamino)-1-(3-pyridyl)-1-butanone	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
95-83-0	4-chloro-ortho-phenylenediamine	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
3165-93-3	4-Chlor-o-toluidiniumchlorid		R carcinogenic						Carc. Cat. 1 Muta. Cat. 3	
60-11-7	4-dimethylaminoazobenzene	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		carcinogenic
57835-92-4	4-nitropyrene	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
100-40-3	4-vinylcyclohexene	Carc. Cat. 2b						carcinogenic		
139-91-3	5-(morpholinomethyl)-3-[(5-nitro-furfurylidene)- amino]-2-oxalolidinone							carcinogenic		
3795-88-8	5-(morpholinomethyl)-3-[(5-nitrofurfurylidene)amino]-2-oxazolidinone	Carc. Cat. 2b								
320-67-2	5-azacytidine	Carc. Cat. 2a	R carcinogenic					carcinogenic		
484-20-8	5-methoxypsoralen	Carc. Cat. 2a		carcinogenic				carcinogenic		
3697-24-3	5-methylchrysene	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
99-59-2	5-nitro-o-anisidine							carcinogenic		
51085-52-0	5-nitro-o-toluidiniumchlorid								Carc. Cat. 3	
81-15-2	5-tert-butyl-2,4,6-trinitro-m-xylol								Carc. Cat. 3	
7496-02-8	6-nitrochrysene	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
57-97-6	7,12-dimethylbenz(a)anthracene							carcinogenic		
194-59-2	7h-dibenzo[c,g]carbazole	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
298-81-7	8-methoxypsoralen with ultraviolet a therapy	Carc. Cat. 1		carcinogenic				carcinogenic		
59-66-5	acetazolamide						developmental			
546-88-3	acetohydroxamic acid						developmental			
50-78-2	acetylsalicylic acid					reproductive	developmental			
50-76-0	actinomycin d						developmental	carcinogenic		
3688-53-7	af-2; [2-(2-furyl)-3-(5-nitro-2-furyl)]acrylamide	Carc. Cat. 2b						carcinogenic		
6795-23-9	aflatoxin m1	Carc. Cat. 2b								
1402-68-2	aflatoxins (naturally occurring mixtures of)	Carc. Cat. 1	K carcinogenic					carcinogenic		
302-79-4	all-trans retinoic acid						developmental			
28981-97-7	alprazolam						developmental			
665-66-7	amantadine hydrochloride						developmental			
39831-55-5	amikacin sulfate						developmental			
125-84-8	aminoglutethimide						developmental			
54-62-6	aminopterin					reproductive	developmental			
19774-82-4	amiodarone hydrochloride					reproductive	developmental			
14028-44-5	amoxapine						developmental			
51264-14-3	amsacrine	Carc. Cat. 2b								
1407-47-2	angiotensin converting enzyme (ace) inhibitors						developmental			
117-37-3	anisindione						developmental			
8052-42-4	asphalt (petroleum) fumes							carcinogenic		carcinogenic
29122-68-7	atenolol						developmental			
34031-32-8	auranofin						developmental			
115-02-6	azaserine	Carc. Cat. 2b		carcinogenic				carcinogenic		
5534-09-8	beclomethasone dipropionate						developmental			
271-89-6	benzofuran	Carc. Cat. 2b						carcinogenic		
5411-22-3	benzphetamine hydrochloride						developmental			
12770-50-2	beryllium aluminum alloy							carcinogenic		
11133-98-5	beryllium copper alloy							carcinogenic		
39413-47-3	beryllium zinc silicate							carcinogenic		
3068-88-0	beta-butyrolactone	Carc. Cat. 2b		carcinogenic				carcinogenic		
36355-01-8	biphenyl ,hexabromo-		R carcinogenic				developmental	carcinogenic		
91-95-2	biphenyl-3,3',4,4'-tetrayltetraamin								Carc. Cat. 3	
108-60-1	bis(2-chloro-1-methylethyl) ether							carcinogenic		

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
83864-02-2	bis(adiponitrile)bis(cyanotriphenylborato)nickel							carcinogenic		
24470-76-6	bis(isobutyl) mercury						developmental			
154-93-8	bischloroethyl nitrosourea (bcnu)	Carc. Cat. 2a	R carcinogenic	carcinogenic			developmental	carcinogenic		
11056-06-7	bleomycine	Carc. Cat. 2b		carcinogenic						
53404-19-6	bromacil lithium salt (2,4(h,3h)-pyrimidinedione, ethyl-3 (1-methylpropyl), lithium salt)					reproductive	developmental			
15541-45-4	bromate							carcinogenic		
143-81-7	butabarbital sodium						developmental			
25013-16-5	butylated hydroxyanisole (bha)	Carc. Cat. 2b	R carcinogenic					carcinogenic		
6459-94-5	c.i. acid red 114	Carc. Cat. 2b						carcinogenic		
28407-37-6	c.i. direct blue 218							carcinogenic		
81-88-9	c.i. food red 15							carcinogenic		
3761-53-3	c.i. food red 5	Carc. Cat. 2b						carcinogenic		
73070-37-8	c.l. direct blue 218								Carc. Cat. 3	
75-60-5	cacodylic acid							carcinogenic		
298-46-4	carbamazepine						developmental			
86-74-8	carbazole							carcinogenic		
1333-86-4	carbon black (exceeding 0.1% pahs)	Carc. Cat. 2b						carcinogenic		carcinogenic
41575-94-4	carboplatin						developmental			
60391-92-6	carboxymethylnitrosourea							carcinogenic		
474-25-9	chenodiol						developmental			
56-75-7	chloramphenicol	Carc. Cat. 2a	R carcinogenic					carcinogenic		
1620-21-9	chlorcyclizine hydrochloride						developmental			
58-25-3	chlordiazepoxide						developmental			
438-41-5	chlordiazepoxide hydrochloride						developmental			
115-28-6	chlorendic acid	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
593-70-4	chlorfluormethan (r 31)								Carc. Cat. 2	
108171-26-2	chlorinated parafins (average chain length c12; approximately 60 percent chlorine by weight)		R carcinogenic					carcinogenic		
569-57-3	chlorotrianisene							carcinogenic		
54749-90-5	chlorozotocin	Carc. Cat. 2a	R carcinogenic					carcinogenic		
57693-14-8	chromate(3-), bis(3-hydroxy-4-((2-hydroxy-1-naphthaleneyl)azo)-7-nitro-1-naphth- alenesulfonato(3-))-,trisodium							carcinogenic		
10101-53-8	chromic sulfate							carcinogenic		

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
79217-60-0	ciclosporin (cyclosporin a; cyclosporine)	Carc. Cat. 1						carcinogenic		
113852-37-2	cidofovir					reproductive	developmental	carcinogenic		
87-29-6	cinnamyl anthranilate							carcinogenic		
15663-27-1	cisplatin	Carc. Cat. 2a	R carcinogenic	carcinogenic				carcinogenic		
6358-53-8	citrus red no.2	Carc. Cat. 2b		carcinogenic				carcinogenic		
4291-63-8	cladribine						developmental			
81103-11-9	clarithromycin						developmental			
25122-46-7	clobetasol propionate					reproductive	developmental			
637-07-0	clofibrate							carcinogenic		
50-41-9	clomiphene citrate						developmental			
57109-90-7	clorazepate dipotassium						developmental			
10026-24-1	Cobalt(II)sulfat-Heptahydrat (bioverfugbar, in Form atembarer Staube/Aerosole)							carcinogenic	Carc. Cat. 2 Muta. Cat. 3 Fert. Cat. 2	
6147-53-1	Cobalt(II)acetat-Tetrahydrat (bioverfugbar, in Form atembarer Staube/Aerosole)								Carc. Cat. 2 Muta. Cat. 3 Fert. Cat. 2	
10026-22-9	Cobalt(II)nitrat-Hexahydrat (bioverfugbar, in Form atembarer Staube/Aerosole)								Carc. Cat. 2 Muta. Cat. 3 Fert. Cat. 2	
513-79-1	Cobaltcarbonat (bioverfugbar, in Form atembarer Staube/Aerosole)								Carc. Cat. 2 Muta. Cat. 3 Fert. Cat. 2	
50-36-2	cocaine					reproductive	developmental			
52-28-8	codeine phosphate						developmental			
135-20-6	cupferron		R carcinogenic					carcinogenic		
14901-08-7	cycasin	Carc. Cat. 2b		carcinogenic				carcinogenic		
1134-23-2	cycloate						developmental			
50-18-0	cyclophosphamide	Carc. Cat. 1	K carcinogenic	carcinogenic		reproductive	developmental	carcinogenic		
6055-19-2	cyclophosphamide (hydrated)					reproductive	developmental	carcinogenic		
147-94-4	cytarabine						developmental			
21739-91-3	cytembena							carcinogenic		
3468-63-1	d & c orange no. 17							carcinogenic		
2092-56-0	d & c red no. 8							carcinogenic		
4342-03-4	dacarbazine	Carc. Cat. 2b	R carcinogenic	carcinogenic			developmental	carcinogenic		
17230-88-5	danazol						developmental			
117-10-2	dantron (chrysazin; 1,8-dihydroxyanthraquinone)	Carc. Cat. 2b	R carcinogenic					carcinogenic		
23541-50-6	daunorubicin hydrochloride						developmental			

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
20830-81-3	daunorubicine	Carc. Cat. 2b		carcinogenic				carcinogenic		
72-54-8	DDD							carcinogenic		
72-55-9	DDE							carcinogenic		
3424-82-6	DDE, O ,P'							carcinogenic		
64-73-3	DEMECLOCYCLINE HYDROCHLORIDE (INTERNAL USE)						developmental			
439-14-5	diazepam						developmental			
364-98-7	diazoxide						developmental			
226-36-8	dibenz[a,h]acridine	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
224-42-0	dibenz[a,j]acridine	Carc. Cat. 2b	R carcinogenic					carcinogenic		
192-65-4	dibenzo[a,e]pyrene	Carc. Cat. 2b	R carcinogenic					carcinogenic		
189-64-0	dibenzo[a,h]pyrene	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
189-55-9	dibenzo[a,i]pyrene	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
191-30-0	dibenzo[a,l]pyrene	Carc. Cat. 2b	R carcinogenic					carcinogenic		
75-27-4	dichlorobromomethane	Carc. Cat. 2b	R carcinogenic					carcinogenic		
1300-21-6	dichloroethane							carcinogenic		
120-97-8	dichlorphenamide						developmental			
947-92-2	Dicyclohexylnitrosamin (DCHNA)								Muta. Cat. 3	
84-17-3	dienestrol							carcinogenic		
56-53-1	diethylstilbestrol	Carc. Cat. 1	K carcinogenic	carcinogenic			developmental	carcinogenic		
22494-42-4	diflunisal					reproductive	developmental			
2238-07-5	diglycidylether								Carc. Cat. 3	carcinogenic
6190-39-2	dihydroergotamine mesylate						developmental			
94-58-6	dihydrosafrole	Carc. Cat. 2b						carcinogenic		
605-50-5	diisopentylphthalat (dipp)								Fert. Cat. 3 Dev. Cat. 2	
1071-39-2	diisopropyl mercury						developmental			
2973-10-6	diisopropyl sulfate	Carc. Cat. 2b						carcinogenic		
33286-22-5	diltiazem hydrochloride						developmental			
868-85-9	dimethylhydrogenphosphit								Carc. Cat. 3	
513-37-1	dimethylvinylchloride	Carc. Cat. 2b	R carcinogenic					carcinogenic		
27478-34-8	dinitronaphthaline (alle isomeren)								Carc. Cat. 3	
131-18-0	dipentylphthalat								Fert. Cat. 2 Dev. Cat. 2	
630-93-3	diphenylhydantoin (phenytoin), sodium salt							carcinogenic		
136-45-8	dipropyl isocinchomeronate							carcinogenic		
138-93-2	disodium						developmental			

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
	cyanodithioimidocarbonate									
564-25-0	doxycycline						developmental			
94088-85-4	doxycycline calcium (internal use)						developmental			
24390-14-5	doxycycline hyclate (internal use)						developmental			
17086-28-1	doxycycline monohydrate (internal use)						developmental			
379-79-3	ergotamine tartrate						developmental			
50-28-2	estradiol-17b							carcinogenic		
53-16-7	estrone							carcinogenic		
7280-37-7	estropipate						developmental	carcinogenic		
75-02-5	ethene, fluoro-	Carc. Cat. 2a	R carcinogenic					carcinogenic		
57-63-6	ethinylestradiol							carcinogenic		
536-33-4	ethionamide						developmental			
62-50-0	ethyl methanesulfonate	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
41340-25-4	etodolac					reproductive	developmental			
33419-42-0	etoposide	Carc. Cat. 2a					developmental			
54350-48-0	etretinate						developmental			
121181-53-1	filgrastim						developmental			
59536-65-1	firemaster bp-6						developmental	carcinogenic		
67774-32-7	firemaster ff-1						developmental	carcinogenic		
3385-03-3	flunisolide					reproductive	developmental			
51-21-8	fluorouracil						developmental			
76-43-7	fluoxymestrone						developmental			
1172-18-5	flurazepam hydrochloride						developmental			
5104-49-4	flurbiprofen					reproductive	developmental			
13311-84-7	flutamide						developmental			
80474-14-2	fluticasone propionate						developmental			
69409-94-5	fluvalinate						developmental			
3570-75-0	formylhydrazino-4-(5-nitro-2-furyl)thiazole	Carc. Cat. 2b		carcinogenic				carcinogenic		
116355-83-0	fumonisin b1	Carc. Cat. 2b								
67-45-8	furazolidone							carcinogenic		
79748-81-5	fusarin c							carcinogenic		
82410-32-0	ganciclovir sodium					reproductive	developmental	carcinogenic		
25812-30-0	gemfibrozil					reproductive		carcinogenic		
765-34-4	glycidaldehyde	Carc. Cat. 2b						carcinogenic		
65807-02-5	goserelin acetate					reproductive	developmental			
126-07-8	griseofulvin	Carc. Cat. 2b						carcinogenic		
16568-02-8	gyromitrin (acetaldehyde							carcinogenic		

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
	methylformylhydrazone)									
23092-17-3	halazepam						developmental			
66852-54-8	halobetasol propionate						developmental			
52-86-8	haloperidol					reproductive	developmental			
2784-94-3	hc blue 1	Carc. Cat. 2b						carcinogenic		
38998-75-3	heptachlorodibenzofuran							carcinogenic		
70648-26-9	hexachlorinated dibenzofuran, 1,2,3,4,7,8-							carcinogenic		
72918-21-9	hexachlorinated dibenzofuran, 1,2,3,7,8,9-							carcinogenic		
60851-34-5	hexachlorinated dibenzofuran, 2,3,4,6,7,8-							carcinogenic		
34465-46-8	hexachlorodibenzodioxin							carcinogenic		
55684-94-1	hexachlorodibenzofuran							carcinogenic		
67485-29-4	hydramethylnon					reproductive	developmental			
127-07-1	hydroxyurea						developmental			
57852-57-0	idarubicin hydrochloride					reproductive	developmental			
3778-73-2	ifosfamide						developmental			
193-39-5	indeno(1,2,3-cd)pyrene	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
22398-80-7	indium phosphide							carcinogenic		
76180-96-6	iq(2-amino-3-methylimidazo[4,5-f]quinoline)	Carc. Cat. 2a	R carcinogenic					carcinogenic		
9004-66-4	iron dextran	Carc. Cat. 2b	R carcinogenic					carcinogenic		
4016-14-2	iso-propylglycidylether								Muta. Cat. 3	
120-58-1	isosafrole							carcinogenic		
4759-48-2	isotretinoin						developmental			
10024-97-2	lachgas				R62, R63					
77501-63-4	lactofen							carcinogenic		
303-34-4	lasiocarpine	Carc. Cat. 2b						carcinogenic		
12709-98-7	lead-molybdenum chromate					reproductive	developmental	carcinogenic		
74381-53-6	leuprolide acetate					reproductive	developmental			
59-92-7	levodopa						developmental			
797-63-7	levonorgestrel implants					reproductive				
554-13-2	lithium carbonate				R62, R61		developmental			
919-16-4	lithium citrate						developmental			
7447-41-8	lithiumchloride				R62, R61					
846-49-1	lorazepam						developmental			
75330-75-5	lovastatin						developmental			
52-76-6	lynestrenol							carcinogenic		

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
632-99-5	magenta (containing ci basic red 9)	Carc. Cat. 2b								
542-78-9	malonaldehyde									carcinogenic
7439-96-5	mangaan en -verbindingen				R62, R63					
31431-39-7	mebendazole						developmental			
51-75-2	mechlorethamine	Carc. Cat. 2a		carcinogenic			developmental	carcinogenic	Carc. Cat. 1 Muta. Cat. 2	
71-58-9	medroxyprogesterone acetate	Carc. Cat. 2b					developmental	carcinogenic		
595-33-5	megestrol acetate						developmental			
77094-11-2	meiq (2-amino-3,4-dimethylimidazo[4,5-f]quinoline)	Carc. Cat. 2b						carcinogenic		
77500-04-0	meiqx(2-amino-3,8-dimethylimidazo[4,5-f]quinoxali e)	Carc. Cat. 2b						carcinogenic		
645-05-6	melamine, hexamethyl-					reproductive	developmental			
9002-68-0	menotropins						developmental			
57-53-4	meprobamate						developmental			
6112-76-1	mercaptopurine						developmental			
1344-48-5	mercuric sulfide						developmental			
531-76-0	merfalan	Carc. Cat. 2b		carcinogenic				carcinogenic		
72-33-3	mestranol							carcinogenic		
3963-95-9	methacycline hydrochloride						developmental			
60-56-0	methimazole						developmental			
59-05-2	methotrexate						developmental			
15475-56-6	methotrexate sodium						developmental			
72-43-5	methoxychlor									carcinogenic
598-55-0	methyl carbamate							carcinogenic		
60-34-4	methyl hydrazine							carcinogenic		carcinogenic
66-27-3	methyl methanesulfonate	Carc. Cat. 2a	R carcinogenic	carcinogenic				carcinogenic		
590-96-5	methylazoxymethanol			carcinogenic				carcinogenic		
93-15-2	Methyleugenol		R carcinogenic					carcinogenic		
58-18-4	methyltestosterone						developmental			
56-04-2	methylthiouracil	Carc. Cat. 2b		carcinogenic				carcinogenic		
9006-42-2	metiram						developmental	carcinogenic		
443-48-1	metronidazole	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
59467-96-8	midazolam hydrochloride						developmental			
13614-98-7	minocycline hydrochloride (internal use)						developmental			
50-07-7	mitomycin c	Carc. Cat. 2b		carcinogenic				carcinogenic		
65271-80-9	mitoxantrone	Carc. Cat. 2b								
70476-82-3	mitoxantrone hydrochloride						developmental			

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
27323-18-8	monochlorobiphenyl						developmental	carcinogenic		
315-22-0	monocrotaline	Carc. Cat. 2b						carcinogenic		
77439-76-0	mx (3-chloro-4-(dichloromethyl)-5-hydroxy-2(5h)-furanone)							carcinogenic		
10127-02-3	n,n,n',n'-tetramethylacridin-3,6-diaminmonohydrochlorid, verbindung mit zinkdichlorid								Muta. Cat. 3	
65-61-2	n,n,n',n'-tetramethylacridin-3,6-yidiaminhydrochlorid								Muta. Cat. 3	
494-03-1	n,n-bis(2-chloroethyl)-2-naphthylamine (chlornapazine)	Carc. Cat. 1		carcinogenic				carcinogenic		
531-82-8	n-[4-(5-nitro-2-furyl)-2-thiazolyl]acetamide	Carc. Cat. 2b		carcinogenic				carcinogenic		
86220-42-0	nafarelin acetate						developmental			
3771-19-5	nafenopin	Carc. Cat. 2b						carcinogenic		
389-08-2	nalidixic acid							carcinogenic		
1405-10-3	neomycin sulfate						developmental			
759-73-9	n-ethyl-n-nitrosourea	Carc. Cat. 2a	R carcinogenic	carcinogenic				carcinogenic		
56391-57-2	netilmicin sulfate						developmental			
37211-05-5	nickel (ii) chloride							carcinogenic		
12125-56-3	nickel (iii) hydroxide							carcinogenic		
10101-97-0	nickel (nickel sulfate hexahydrate)							carcinogenic		
373-02-4	nickel acetate							carcinogenic	Carc. Cat. 1	
15699-18-0	nickel ammonium sulfate							carcinogenic		
14216-75-2	nickel nitrate							carcinogenic		
35884-66-3	nickel, tetrakis(tris(methylphenyl) phosphite-p)- (9ci)							carcinogenic		
1271-28-9	nickelocene							carcinogenic		
13138-45-9	nickelous nitrate							carcinogenic		
21829-25-4	nifedipine					reproductive	developmental			
66085-59-4	nimodipine						developmental			
61-57-4	niridazole	Carc. Cat. 2b		carcinogenic				carcinogenic		
139-13-9	nitrilotriacetic acid and its salts	Carc. Cat. 2b	R carcinogenic					carcinogenic		
18662-53-8	nitrilotriacetic acid, trisodium salt monohydrate							carcinogenic		
67-20-9	nitrofurantoin					reproductive				
59-87-0	nitrofurazone							carcinogenic		
55-86-7	nitrogen mustard hydrochloride		R carcinogenic				developmental	carcinogenic		
126-85-2	nitrogen mustard n-oxide	Carc. Cat. 2b		carcinogenic				carcinogenic		

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
302-70-5	nitrogen mustard n-oxide hydrochloride							carcinogenic		
924-42-5	n-methylolacrylamide							carcinogenic		
2832-19-1	n-methylolchloracetamid								Muta. Cat. 3	
55-18-5	n-nitrosodiethylamine	Carc. Cat. 2a	R carcinogenic	carcinogenic				carcinogenic	Carc. Cat. 2	
601-77-4	n-nitrosodi-i-propylamin			carcinogenic					Carc. Cat. 2	
924-16-3	n-nitrosodi-n-butylamine	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic	Carc. Cat. 2	
86-30-6	n-nitrosodiphenylamine							carcinogenic		
612-64-6	n-nitrosoethylphenylamin								Carc. Cat. 2	
10595-95-6	n-nitrosomethylethylamine	Carc. Cat. 2b		carcinogenic				carcinogenic	Carc. Cat. 2	
614-00-6	n-nitrosomethylphenylamin								Carc. Cat. 2	
4549-40-0	n-nitrosomethylvinylamine	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
59-89-2	n-nitrosomorpholine	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic	Carc. Cat. 2	
684-93-5	n-nitroso-n-methylurea	Carc. Cat. 2a	R carcinogenic	carcinogenic				carcinogenic		
615-53-2	n-nitroso-n-methylurethane	Carc. Cat. 2b		carcinogenic				carcinogenic		
80508-23-2	n-nitrosonornicotine			carcinogenic						
16543-55-8	n'-nitrosonornicotine	Carc. Cat. 2b	R carcinogenic					carcinogenic		
100-75-4	n-nitrosopiperidin	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic	Carc. Cat. 2	
930-55-2	n-nitrosopyrrolidine	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic	Carc. Cat. 2	
13256-22-9	n-nitrososarcosine	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic		
68-22-4	norethisterone		R carcinogenic				developmental	carcinogenic		
51-98-9	norethisterone acetate (norethindrone acetate)						developmental			
68-23-5	norethynodrel							carcinogenic		
6533-00-2	norgestrel						developmental			
53-19-0	o,p-ddd							carcinogenic		
789-02-6	o,p'-ddt					reproductive	developmental	carcinogenic		
303-47-9	ochratoxin a	Carc. Cat. 2b	R carcinogenic					carcinogenic		
27858-07-7	octabromobiphenyl						developmental	carcinogenic		
3268-87-9	octachlorodibenzo-p-dioxin							carcinogenic		
2646-17-5	oil orange ss	Carc. Cat. 2b						carcinogenic		
23696-28-8	olaquindox								Carc. Cat. 3 Muta. Cat. 2 Fert. Cat. 3	
636-21-5	o-toluidine hydrochloride		R carcinogenic					carcinogenic		
604-75-1	oxazepam	Carc. Cat. 2b					developmental	carcinogenic		
434-07-1	oxymetholone		R carcinogenic				developmental	carcinogenic		
79-57-2	oxytetracycline						developmental			
2058-46-0	oxytetracycline hydrochloride						developmental			

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
	(internal use)									
10028-15-6	Ozon								Carc. Cat. 3	
33069-62-4	paclitaxel					reproductive	developmental			
12174-11-7	palygorskite (attapulgite) (long fibres, > 5 micrometers)	Carc. Cat. 2b						carcinogenic		
794-93-4	panfuran s	Carc. Cat. 2b		Carcinogenic				carcinogenic		
115-67-3	paramethadione						developmental			
20265-96-7	p-chloroaniline.hcl							carcinogenic		
52-67-5	penicillamine						developmental			
30402-15-4	pentachlorodibenzofuran							carcinogenic		
36088-22-9	pentachlorodibenzo-p-dioxin							carcinogenic		
57-33-0	pentobarbital sodium						developmental			
53910-25-1	pentostatin						developmental			
63-98-9	phenacemide						developmental			
62-44-2	phenacetin	Carc. Cat. 2a	R carcinogenic					carcinogenic		
94-78-0	phenazopyridine							carcinogenic		
136-40-3	phenazopyridine hydrochloride	Carc. Cat. 2b	R carcinogenic					carcinogenic		
3546-10-9	phenesterin							carcinogenic		
50-06-6	phenobarbital	Carc. Cat. 2b						carcinogenic		
77-09-8	phenolphthalein	Carc. Cat. 2b	R carcinogenic					carcinogenic		
59-96-1	phenoxybenzamine							carcinogenic		
63-92-3	phenoxybenzamine hydrochloride	Carc. Cat. 2b	R carcinogenic					carcinogenic		
435-97-2	phenprocoumon						developmental			
57-41-0	phenytoin	Carc. Cat. 2b	R carcinogenic				developmental	carcinogenic		
105650-23-5	phip (2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine)	Carc. Cat. 2b						carcinogenic		
2062-78-4	pimozide					reproductive	developmental			
54-91-1	pipobroman						developmental			
18378-89-7	plicamycin						developmental			
156-10-5	p-nitrosodiphenylamine							carcinogenic		
53973-98-1	polygeenan							carcinogenic		
3564-09-8	ponceau 3r	Carc. Cat. 2b						carcinogenic		
128-03-0	potassium dimethyldithiocarbamate						developmental			
81131-70-6	pravastatin sodium						developmental			
125-02-0	prednisolone sodium phosphate						developmental			
125-33-7	primidone							carcinogenic		
671-16-9	procarbazine							carcinogenic		
366-70-1	procarbazine hydrochloride	Carc. Cat. 2a	R carcinogenic	carcinogenic			developmental	carcinogenic		
32809-16-8	procymidone							carcinogenic		

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
57-83-0	progesterone		R carcinogenic					carcinogenic		
51-52-5	propylthiouracil	Carc. Cat. 2b	R carcinogenic	carcinogenic			developmental	carcinogenic		
87625-62-5	ptaquiloside			carcinogenic						
58-14-0	pyrimethamine						developmental			
36735-22-5	quazepam						developmental			
76578-14-8	quizalofop-ethyl					reproductive				
50-55-5	reserpine		R carcinogenic					carcinogenic		
68-26-8	retinol / retinyl esters, when in daily dosage in excess of 10,000 iu,or 3,000 retinol equivalents						developmental			
36791-04-5	ribavirin					reproductive	developmental			
23246-96-0	riddelliine	Carc. Cat. 2b								
13292-46-1	rifampicin					reproductive	developmental			
599-79-1	salicylazosulfapyridine					reproductive		carcinogenic		
309-43-3	secobarbital sodium						developmental			
68308-34-9	shale-oils							carcinogenic		
1317-95-9	Silica, crystalline tripoli									carcinogenic
60676-86-0	silica, fused									carcinogenic
128-04-1	sodium dimethyldithiocarbamate						developmental			
52-01-7	spironolactone							carcinogenic		
10418-03-8	stanozolol							carcinogenic		
10048-13-2	sterigmatocystin	Carc. Cat. 2b		carcinogenic				carcinogenic		
3810-74-0	streptomycin sulfate						developmental			
18883-66-4	streptozotocin	Carc. Cat. 2b	R carcinogenic	carcinogenic		reproductive	developmental	carcinogenic		
38194-50-2	sulindac					reproductive	developmental			
10540-29-1	tamoxifen and its salts	Carc. Cat. 1	K carcinogenic					carcinogenic		
54965-24-1	tamoxifen citrate						developmental			
846-50-4	temazepam						developmental			
29767-20-2	teniposide	Carc. Cat. 2a					developmental			
5902-51-2	terbacil						developmental			
1189-85-1	tert-butyl chromate							carcinogenic		carcinogenic
58-22-0	testosterone and its esters							carcinogenic		
58-20-8	testosterone cypionate						developmental			
315-37-7	testosterone enanthate						developmental			
30402-14-3	tetrachlorodibenzofuran							carcinogenic		
60-54-8	tetracycline (internal use)						developmental			
64-75-5	tetracycline hydrochloride						developmental			
509-14-8	tetranitromethane	Carc. Cat. 2b	R carcinogenic	carcinogenic				carcinogenic	Carc. Cat. 2	
50-35-1	thalidomide						developmental			

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
59669-26-0	thiodicarb							carcinogenic		
154-42-7	thioguanine						developmental			
141-90-2	thiouracil	Carc. Cat. 2b								
7440-29-1	thorium							carcinogenic		
13463-67-7	titanium dioxide									carcinogenic
49842-07-1	tobramycin sulfate						developmental			
10061-02-6	trans-1,3-dichloropropene							carcinogenic		
25962-77-0	trans-2-[(Dimethylamino)methylimino]-5-[2-(5-nitro-2-furyl)-vinyl]-1,3,4-oxadiazole	Carc. Cat. 2b								
55738-54-0	trans-2-[(dimethylamino)methylimino]-5-[2-5-nitro-2-furyl)vinyl]-1,3,4-oxadiazole							carcinogenic		
14567-73-8	Tremolite silicates									carcinogenic
299-75-2	treosulfan	Carc. Cat. 1		carcinogenic				carcinogenic		
68-76-8	triaziquone							carcinogenic		
28911-01-5	triazolam						developmental			
817-09-4	trichlormethine (trimustine hydrochloride)	Carc. Cat. 2b						carcinogenic		
38260-01-4	trientine hydrochloride						developmental			
26644-46-2	triforine						developmental			
13647-35-3	trilostane						developmental			
127-48-0	trimethadione						developmental			
512-56-1	trimethyl phosphate							carcinogenic		
82952-64-5	trimetrexate glucuronate						developmental			
52-24-4	tris(1-aziridinyl) phosphine sulfide (thiotepa)	Carc. Cat. 1	K carcinogenic	carcinogenic				carcinogenic		
126-72-7	tris(2,3-dibromopropyl) phosphate	Carc. Cat. 2a	R carcinogenic	carcinogenic				carcinogenic		
62450-06-0	trp-p-1 (tryptophan-p-1)	Carc. Cat. 2b						carcinogenic		
62450-07-1	trp-p-2 (tryptophan-p-2)	Carc. Cat. 2b						carcinogenic		
72-57-1	trypan blue	Carc. Cat. 2b						carcinogenic		
66-75-1	uracil mustard	Carc. Cat. 2b		carcinogenic		reproductive	developmental	carcinogenic		
97048-13-0	urofollitropin						developmental			
99-66-1	valproate						developmental			
143-67-9	vinblastine sulfate						developmental			
2068-78-2	vincristine sulfate						developmental			
129-06-6	warfarin sodium						developmental			

CAS-number	Name	Classification IARC	Classification NTP	Classification GR carcinogenic	Classification GR reprotoxic	Classification Scorecard reprotoxic	Classification Scorecard developmental	Classification Scorecard carcinogenic	Classification Germany	Classification NIOSH
7481-89-2	Zalcitabine	Carc. Cat. 2b								
30516-87-1	Zidovudine (AZT)	Carc. Cat. 2b								
111406-87-2	Zileuton					reproductive	developmental	carcinogenic		
37300-23-5	Zinc chromate with zinc hydroxide and chromium oxide (9:1)							carcinogenic		
37224-57-0	Zinc potassium chromate							carcinogenic		

1: K carcinogen: known human carcinogen
2: R carcinogen: reasonably anticipated to be a human carcinogen

Appendix 2 Description of the SPIN database

The description below is obtained from the SPIN website (http://www.spin2000.net/spin.html).

1 Background

The national product registers in Denmark, Finland, Norway and Sweden are unique and very valuable sources of data concerning the downstream uses of chemical substances in products on the national markets.

SPIN – Substances in Preparations In the Nordic countries – is a database that contains 'non-confidential' information on substances from each of the Nordic product registers.
The intention behind the database SPIN is to make available to the public as much data as possible from the registers. Sometimes secrecy rules can then be an obstacle, something which here is overcome by aggregation of the data from each register. Thereby, the number of products within a certain use or industry category is increased. As a result more information on a greater number of chemical substances can be used e.g. for the purpose of exposure assessment. The information included is for example the number of products containing the substance, the annual tonnage, industrial categories and use categories, the annual tonnage within these categories and the presence or absence of the substance in consumer products.

2 The Nordic product registers

The Nordic product registers are central registers that keep information on chemical substances and products. National legislation requires manufacturers and importers to declare chemical substances and products to the product registers. Data in the registers includes information on function, industrial category, classification, composition, quantity etc. The registers are useful tools for the national authorities and poison information centres in efforts to prevent injury to health and environmental damage resulting from chemicals. Data in the registers is used as support for risk assessments, statistical calculations, substance flow analyses and supervision activities, and SPIN is intended to become an important tool in the same kind of work.

3 The kind of data in SPIN

SPIN is the result of a common Nordic initiative to gather non-confidential, summarised information from the Nordic product registers on the common use of chemical substances in different types of products and industrial areas. The name SPIN stands for 'Substances in Preparations in the Nordic Countries' but no specific product names are to be found among the data. The only names specified are the names of the commonly used chemical substances. All the data are summarised and

no references can be made to specific concentrations of any given substance in any kind of product. The summarised data in SPIN are in general based on the following data in the Nordic product registers:

General substance information:

CAS-number
Name(s)
Molecular formula
Lists (international or national bans, IARC, etc.)
Index-number (Annex I to the 67-directive)
Colour Index Number (C.I.-number)
EC-number (EINECS, ELINCS, NLP)

Summarised information on use of substances:

Use categories (technical and functional) of the products and preparations in which the substances are found.
Main Category-codes (IUCLID)
Industrial area codes of the products and preparations in which the substances are found (NACE).
Summarised substance volumes (tons per year).*
Use of substances in aerosol products and preparations (yes or no).
Use of substances in consumer products and preparations (yes or no).

*) Volume = produced volume + imported volume - exported volume.

4 Substances and products in the Nordic product registers

Of the Nordic product registers, the Danish and Swedish product registers contain information on the largest numbers of products and the highest proportion of products on the market. In Denmark, it has been found that an average of 50-60 per cent of chemicals on the market are registered, but that this varies from 10 to 90 per cent for different branches of industry and types of products. In Sweden, experience suggests that in general, the product register includes 90-95 per cent of the products on the market.

In Norway, declaration is mandatory for all products to which the Regulations relating to the classification, labelling, etc. of dangerous chemicals (the Chemical Labelling Regulations) apply. These regulations implement EU directives on the classification, labelling, etc. of chemicals in Norwegian legislation. The requirements for declaration to the Finnish and Danish product registers are also based on these directives, but there are extensive national rules for declaration in addition. In Finland these additional requirements for example apply to pesticides and chemicals that cause danger although they are not classified, and in Denmark they apply to solvents, pesticides, biocides and cosmetics. In Sweden, the declaration requirements are based

on the customs tariff codes, so that as a general rule, they apply to all chemical products (substances and preparations). The Swedish register therefore contains more products than those that are classified as dangerous according to EU legislation. All four countries exempt products that come under legislation on foodstuffs and medicinal products from mandatory declaration. Furthermore, the duty to declare products to the product registers does not apply to cosmetic products in Sweden, Norway and Finland.

In addition, there is no requirement to declare solid processed articles to any of the registers. Thus, the duty to declare products to the registers does not include chemicals in textiles, chipboard, etc. There is also a general exemption from the duty to declare chemicals in Sweden, Finland and Norway, if the quantity produced or imported is less than 100 kg per year. This means that small volumes of chemicals (e.g. laboratory chemicals, products for dental services) may escape registration.

The introduction in 2002 of a requirement to declare preparations harmful to the environment is expected to improve the coverage of products on the market in the Norwegian product register. It is assumed that the current legislation in Finland, Sweden and Denmark ensures that most substances and preparations harmful to the environment are already registered.

5 The Nordic product registers information on product composition

Of the Nordic countries, only Denmark and Norway require information on all constituents for most products for which declaration is mandatory. Denmark has complete information on composition for the largest number of products. In Sweden, substances that are not classified as dangerous and that make up less than 5 per cent of a product may be omitted from the declaration. In Finland, information on the composition of products is registered from the safety data sheets. Complete information on the exact composition is consequently not necessarily given.

6 Updating of the Nordic product registers and SPIN

In Sweden and Norway, the quantities, the classification, the codes for areas of use and the codes for product types of products are updated every year, and trends can therefore be followed for both substances and products. Updating of the other information given by the company at registration like composition and physical properties is supposed to happen whenever these conditions are altered.

In Finland the Finnish product register has only been collecting information on quantities since year 2001.

In Denmark, there is no systematic updating of quantities of products, however the companies are obliged to send in any new information regarding their products whenever changes occur. If companies fail to fulfil their obligations a result might be,

that products that have been discontinued still remain on the lists. When the data in the Danish product register is used, it is always assumed that the data are all updated, regardless of the fact, that this might not be true.

The SPIN database is updated on a yearly basis making the assumption, that data delivered from each register are as updated as they can be.

7 Quality control in the Nordic product registers

Except for the systematic checking of classification information done by the Finnish product register, none of the Nordic product registers has systematic routines for checking whether the data submitted by the companies are correct. However, data on quantities may be checked in connection with the annual update in Norway and Sweden. For example, information may be checked if disagreements with previously reported figures are found. In Norway and Sweden, companies are also required to check various types of information when they submit their annual updates. In Norway, this applies to whether the danger categories recorded are correct, and whether the composition of the product has been changed.

8 Function of a substance in a product

In Denmark, the function of a substance in a product has been evaluated and registered by the product register. In Norway, the companies submitting declarations provide such data on a voluntary basis. Stating of the function of a substance is in Sweden only done when the substance is intended to act as a preservative in the product. For the moment, data regarding function of substances in products and preparations are only included in SPIN based on data from the Danish Product Register.

9 Codes for areas of use (industrial categories)

The Nordic product registers use the NACE (the statistical classification of economic activities in the European Community which was also embodied in the EEA Agreement by the EFTA countries) codes to indicate the branches of industry where the products are used. Unfortunately, the European Chemicals Bureau (ECB) does not use the same system, which makes analyses linking data from different sources more complicated and less useful. All the Nordic registers report to SPIN using NACE at the 2-digit level.

When the number of products allow it Denmark and Sweden also report to SPIN in more detailed national codes based on NACE.

The Danish register uses the Danish Industrial Classification of All Economic Activities from Statistics Denmark. It is a 6-digit subdivision of NACE with 2 leading characters designating the main groups of NACE.

Swedish Industrial codes have their origin in NACE codes by the adoption of Standard Industrial Classification; SIC 92 into SE-SIC 92, Swedish Standard Industrial Classification. This classification is used by Statistics Sweden for official statistics. A selection of those codes has been used as codes for reporting industrial category to the products register since 1992. Those industrial categories cover all economic activities in Sweden to a different level for different categories. It was considered more important with high resolutions, more detailed coding, for report of the economic activities dealing for the most part with chemicals than for others less related to such. This means that some economic activities are reported only with their NACE section, one level only, to the register whereas some are reported to the level with section and five digits.

10 Codes for technical types of products and preparations (use categories)

A few years ago a code list of 62 use categories, UC62, for chemical substances and preparations was developed on the basis of the 55 function categories designed by EU for new substances, later included in the HEDSET for existing substances. These substance categories could with addition of 7 new categories and a few adjustments be used for preparations as well, so the 2-digit key was retained in combination with a single letter indicating the degree of change compared to the substance categories. The Nordic registers (with Finland starting after 2003) report to SPIN using UC62.

Since 1993 the product register of Finland has used a national list of 36 use categories. In year 2003 the national use categories are changed to the UC62 codes.

The national codes used by the other registers are more detailed than UC62. Denmark and Norway use a code system describing technical function of chemical substances and preparations with practically no reference to the chemical basis. There are about 120 main categories subdivided to more than 400 specific categories.

The Swedish national use categories for report of a product to the products register are specifically created for this purpose. They can mirror the function for which a substance is used or what kind of a preparation the product is. The aim of naming the product types, that are called functions in the nomenclature of the register, has been to use the same naming as the supplier. There are about 220 Swedish use categories.

In 2002 a new set of harmonised product type codes, UCN (Use Categories Nordic) have been developed by Norway, Sweden, and Denmark. UCN will later replace the existing national codes in these tree countries.

11 Uncertainties

Systematic updating of the data in the product registers is important, since experience has shown that the general requirement to notify changes does not give satisfactory results. Experience has shown that when the composition of a product is changed, the

companies do often not report this to the product registers. This error maybe is smaller in Norway where companies are asked each year if they have updated their composition data.

The total amount of a substance in SPIN is the added quantities of the substance in all products, the export amount subtracted. That is to say that if a substance is registered first as the imported raw material and then as part of the final preparation the quantity will be counted twice. Substances that are used for formulation of chemical products and that are imported, and most are in the Nordic countries, will thus be accounted for with maybe double the actual amount. The accuracy of the total net turnover will be dependent on the use of the substance; a substance imported only for use in synthesis will appear with a more correct quantity. The more disintegrated the use is, the more correct the figure will be, as it is hardly likely that the same molecule will act both as raw material to a trade, formulated and then sold to the same trade again.

Another factor giving a distortion of the quantity value is when concentration has been registered as an interval. The upper limit has been chosen for calculations of the substance amount in Denmark, Finland and Norway. The Swedish data are given as the mean percentage. Depending on how wide the allowed interval is in the different countries the discrepancy between the given value and the true value will vary.

In Sweden the possibility to not declare all ingredients in all concentrations cause uncertainty in the substance quantity figure. This is particularly important when trying to estimate substances that, however hazardous, are active in low percentage. On the other hand the other Nordic product registers mainly contain hazardous chemical products, thus giving an underestimation of both hazardous and not hazardous substances, as they don’t account for quantities in non-hazardous chemical products.

Secrecy rules have made it necessary to exclude data on many substances in SPIN. Thus, addition of subsets will not give a correct answer and can not be compared to the total amount of the substance. Moreover, Danish industrial category quantities have been distributed with the entire substance amount for each product on each of the industrial categories given for that product. An addition of such industrial category quantities can give a value both double and triple the total substance amount.

Another obstacle when evaluating industrial category quantities is that in Sweden some industrial categories are only registered on the one digit level. This one digit level substance quantity has been distributed on the underlying two digit levels which may cause an error in allocation, some sub-category getting to much and others too little.

Secrecy considerations have resulted in that some substances that are in the Nordic product registers are only mentioned in SPIN by their name. Total quantities and the

total number of products have not been reported to SPIN if the substance is contained in less than 4 products and is registered by less than 3 companies. To show that the lack of information is due to confidentiality, a ‘Yes’ is stated under the column heading ‘Confidential’ in the ‘Total use’-window.

Finally it should be mentioned that information about specific substances and polymers only has been reported to SPIN when they have an unambiguous CAS-number.

12 Limits in the use of data

It is important to always remember that the use accounted for in SPIN is the use of substances in chemical products and preparations. The selection of registered products and preparations is different between the Nordic countries, but most important is that non-chemical products are not included. Thus the substance can very well be used and present in other kinds of products because the quantities refer to use in chemical products only. For example biocides and heavy metals contained in articles are not included in SPIN.

SPIN gives a rough estimation of quantities used in different areas in the Nordic countries. The figures are not as accurate as the number of digits suggests, when using them preferably round them off considerably.

13 Summary

The Nordic product registers are among the most comprehensive product registers in the world with regard to completeness of information and the number of registered products and substances. The Nordic product registers contain valuable information on the actual use of chemical preparations and substances on the market both in terms of volumes, number of products, composition of products and the use and industry categories where the substance can be found. SPIN is a unique way of widely releasing this kind of valuable key information without disclosing any confidential data. In the long run the views of what is considered to be common, non-confidential information in each of the Nordic countries should be harmonised as a result of the SPIN project.

Appendix 3 Summary of available product registers

Table A.1. The Dutch database.

Administrative position	Nationaal Vergiftigingen Informatie Centrum (NVIC) department of the Rijksinstituut voor Volksgezondheid en Milieu (RIVM)
Language	Dutch
Registered products	• obligatory for toxic, very toxic and corrosive preparations • includes medicines, veterinary medicines and cosmetics
Exemptions of declaration	According to preparation directive
Percentage and number of al chemical products registered	Unknown, but low. The electronic database contains approximately 3000 preparations. There is a paper database of approximately 15,000 MSDS that is not electronically searchable for substances.
Information on composition	Present if the concentration is above the limit depending on the hazard
Chemical identification by CAS-number	Yes
Information on classification of constituents (R-phrases)	No R-phrases, but only T+, T or C for the constituents and R-phrases for the preparation.
Updating	Initiative of the applicant
Information on the function of the substance in the product	No
Information on use of chemicals for non-occupational purposes	yes
Use of data	Confidential
Contact for information	Pieter Brekelmans Email: pieter.brekelmans@rivm.nl Phone: 030-2508557

Table A.2. The Danish database.

Administrative position	Department of data on chemical products Part of the National Working Environment Service
Language	Danish
Registered products	• Products classified as dangerous according to EU legislation • Solvents • Carcinogenic products • Pesticides • Biocides • Cosmetics • Offshore products • Voluntary declarations
Exemptions of declaration	Foodstuffs Medicinal products Products that do not contain dangerous substances Preparations harmful to the environment Solid processed articles
Number and percentage of al chemical products registered	76,800 (in use and discontinued) about 50-60% of the products
Information on composition	For most products, complete information on composition must be registered
Chemical identification by CAS-number	Yes
Information on classification of constituents (R-phrases)	No
Updating	No systematic updating of quantities and number of products
Information on the function of the substance in the product	Registered
Information on use of chemicals for non-occupational purposes	Lacking to a great extent
Use of data	Researchers can obtain confidential information from the register if they have security clearance. Non-confidential information is freely available
Contact for information	**Arbejdstilsynet** Register for stoffer og materialer Landskronagade 33 2100 København Ø Denmark Phone: +45 39 15 20 00 Fax: +45 39 29 97 12 E-mail: pd@arbejdstilsynet.dk

Table A.3. The Finnish database

Administrative position	Part of the National Product Control Agency for Welfare and Health
Language	Finnish
Registered products	EU directives plus pesticides
Exemptions of declaration	Foodstuff Medical products Cosmetics Solid processed articles Below 100 kg/year
Number and percentage of al chemical products registered	27,500, percentage not stated
Information on composition	Yes, but depending on MSDS information
Chemical identification by CAS-number	Yes
Information on classification of constituents (R-phrases)	Yes
Updating	If new information comes available
Information on the function of the substance in the product	No
Information on use of chemicals for non-occupational purposes	Lacking to a great extent
Use of data	Certain types of non-confidential information is freely available
Contact for information	**National Product Control Agency for Welfare and Health** **Product Register Unit** P.O. Box 686 (Uimalankatu 1) 33101 Tampere Phone +358 3 260 8200 Fax +358 3 260 8222 E-mail: tuote.rekisteri@sttv.fi

Table A.4. The Swedish database

Administrative position	Part of the National Chemical Inspectorate
Language	Not stated
Registered products	All chemical products
Exemptions of declaration	Foodstuff Medical products Cosmetics Solid processed articles Below 100 kg/year
Number and percentage of al chemical products registered	58,000 products, 90-95% of the products
Information on composition	Yes, except for substances not dangerous and below 5%
Chemical identification by CAS-number	Yes
Information on classification of constituents (R-phrases)	No
Updating	Quantities and number of preparations updated each year
Information on the function of the substance in the product	No
Information on use of chemicals for non-occupational purposes	Yes
Use of data	Researchers can obtain confidential information from the register. Non-confidential information is freely available
Contact for information	**National Chemicals Inspectorate** P.O. Box 1384 SE - 171 27 SOLNA Sweden Phone: +46 8 783 11 00 Fax: +46 8 735 76 98 E-mail: kemi@kemi.se

Table A.5. The Norwegian database.

Administrative position	Subordinate agency of the Ministry of Local Government and Regional Development
Language	Not stated
Registered products	According to EU directives
Exemptions of declaration	Foodstuff Medical products Cosmetics Solid processed articles Below 100 kg/year
Number and percentage of al chemical products registered	24,000 products
Information on composition	Yes
Chemical identification by CAS-number	Yes
Information on classification of constituents (R-phrases)	Yes
Updating	Quantities and number of preparations updated each year
Information on the function of the substance in the product	Voluntary basis
Information on use of chemicals for non-occupational purposes	Lacking to a great extent
Use of data	Confidential information only available for specific Norwegian authorities
Contact for information	**The Product Register** Schweigaardsgate 34E P.O. Box 8180 Dep, N-0034 Oslo Norway Phone: +47 22 05 48 80 Fax: +47 22 05 48 99 E-mail: produktregisteret@produktregisteret.no

Table A.6. The Swiss database.

Administrative position	Nationalen Alarmzentrale and Swiss Federal Office of Public Health
Language	Four languages including English and German
Website online search	http://igs.naz.ch/tox/de/index.html
Registered products	All chemical preparations
Exemptions of declaration	None
Percentage of al chemical products registered	Unknown, 100%
Information on composition	Available, but not in online version. Online version contains some chemical information on products (main toxic substance).
Chemical identification by CAS-number	Only of the pure substances not of the ingredients.
Information on classification of constituents (R-phrases)	No
Updating	Annually
Information on the function of the substance in the product	No
Information on use of chemicals for non-occupational purposes	Yes. There are four lists with consumer/industrial use and toxic/non-toxic products available as pdf.
Use of data	Confidential information is restricted
Contact for information	BAG-CHEN@bag.admin.ch

Table A.7. US database.

Administrative position	National Library of Medicine (USA)
Language	English
Website online search	http://householdproducts.nlm.nih.gov/index.htm
Registered products	Consumer household products
Exemptions of declaration	-
Percentage of al chemical products registered	Unknown but low, contains approximately 4000 products
Information on composition	Available
Chemical identification by CAS-number	Yes
Information on classification of constituents (R-phrases)	Not used
Updating	Voluntary
Information on the function of the substance in the product	No
Information on use of chemicals for non-occupational purposes	Only consumer products
Use of data	Based on public data, searchable database
Contact for information	tehip@teh.nlm.nih.gov

Appendix 4 List of classified CMR substances present in consumer preparations

CasNo	Name	Synonym Group Name	Annex I No	Classification
100684-33-1	Petrolatum (petroleum), clay-treated	Petrolatum (petroleum), clay-treated; Petrolatum	649-260-00-2	Carc.2; R45
101316-69-2	Lubricating oils (petroleum), C>25, solvent-extd., deasphalted, dewaxed, hydrogenated	Lubricating oils (petroleum), C<{IND}> >25<{/IND}>, solvent-extd., deasphalted, dewaxed, hydrogenated; Baseoil - unspecified	649-527-00-3	Carc.2; R45
101316-70-5	Lubricating oils (petroleum), C17-32, solvent-extd., dewaxed, hydrogenated	Lubricating oils (petroleum), C<{IND}>17-32<{/IND}>, solvent-extd., dewaxed, hydrogenated; Baseoil - unspecified	649-528-00-9	Carc.2; R45
101316-71-6	Lubricating oils (petroleum), C20-35, solvent-extd., dewaxed, hydrogenated	Lubricating oils (petroleum), C<{IND}>20-35<{/IND}>, solvent-extd., dewaxed, hydrogenated; Baseoil - unspecified	649-529-00-4	Carc.2; R45
101316-72-7	Lubricating oils (petroleum), C24-50, solvent-extd., dewaxed, hydrogenated	Lubricating oils (petroleum), C<{IND}>24-50<{/IND}>, solvent-extd., dewaxed, hydrogenated; Baseoil - unspecified	649-530-00-X	Carc.2; R45
10588-01-9	Chromic acid, disodium salt	sodium dichromate	024-004-00-7	O; R8 Carc.2; R49 Mut.2; R46 T+; R26 T; R25 Xn; R21 Xi; R37/38-41 R43 N; R50-53
106-89-8	Oxirane, (chloromethyl)-	1-chloro-2,3-epoxypropane; epichlorhydrin	603-026-00-6	R10 Carc.2; R45 T; R23/24/25 C; R34 R43
106-93-4	Ethane, 1,2-dibromo-	1,2-dibromoethane	602-010-00-6	Carc.2; R45 T; R23/24/25 Xi; R36/37/38 N; R51-53
106-97-8	Butane containing >0.1% butadiene	butane (containing ¿ 0.1 % butadiene (203-450-8)); isobutane (containing ¿ 0.1 % butadiene (203-450-8))	601-004-01-8	F+; R12 Carc.1; R45 Mut.2; R46
106-99-0	1,3-Butadiene	1,3-butadiene; buta-1,3-diene	601-013-00-X	F+; R12 Carc.1; R45 Mut.2; R46
107-13-1	2-Propenenitrile	acrylonitrile	608-003-00-4	F; R11 Carc.2; R45 T; R23/24/25 Xi; R37/38-41 R43 N; R51-53
109-86-4	Ethanol, 2-methoxy-	2-methoxyethanol; ethylene glycol monomethyl ether	603-011-00-4	R10 Repr.2; R60-61 Xn; R20/21/22
110-80-5	Ethanol, 2-ethoxy-	2-ethoxyethanol; ethylene glycol monoethyl ether	603-012-00-X	R10 Repr.2; R60-61 Xn; R20/21/22
111-15-9	Ethanol, 2-ethoxy-, acetate	2-ethoxyethyl acetate; ethylglycol acetate	607-037-00-7	Repr.2; R60-61 Xn; R20/21/22
111-96-6	bis(2-methoxyethyl)ether	bis(2-methoxyethyl) ether	603-139-00-0	R10 R19 Repr.2; R60-61
117-81-7	bis(2-ethylhexyl)phthalate; DEHP	bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP	607-317-00-9	Repr.2; R60-61
121-14-2	Benzene, 1-methyl-2,4-dinitro-	2,4-dinitrotoluene; dinitrotoluene; dinitrotoluene, technical grade	609-007-00-9	Carc.2; R45 Mut.3; R68 Repr.3; R62 T; R23/24/25 Xn; R48/22 N; R51-53
12656-85-8	Lead chromate molybdate sulfate red	Lead chromate molybdate sulfate red; C.I. Pigment Red 104 [This substance is identified in the Colour Index by Colour Index Constitution Number, C.I. 77605.]	082-010-00-5	Carc.3; R40 Repr.1; R61 Repr.3; R62 R33 N; R50-53
1308-14-1	Chromium hydroxide	Chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex	024-017-00-8	Carc.2; R49 R43 N; R50-53

CasNo	Name	Synonym Group Name	Annex I No	Classification
1309-60-0	Lead oxide	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
1314-41-6	Lead oxide	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
1317-36-8	Lead oxide	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
1319-46-6	Lead, bis[carbonato(2-)]dihydroxytri-	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
1344-36-1	C.I. Pigment White 1	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
1344-37-2	Lead sulfochromate yellow		082-009-00-X	Carc.3; R40 Repr.1; R61 Repr.3; R62 R33 N; R50-53
13530-65-9	Chromic acid, zinc salt (1:1)	zinc chromates including zinc potassium chromate	024-007-00-3	Carc.2; R45 Xn; R22 R43 N; R50-53
15696-43-2	Octanoic acid, lead salt	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
15739-80-7	Sulfuric acid, lead salt	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
1589-47-5	1-Propanol, 2-methoxy-	2-methoxypropanol	603-106-00-0	R10 Repr.2; R61 Xi; R37/38-41
25321-14-6	Benzene, methyldinitro-	2,4-dinitrotoluene; dinitrotoluene; dinitrotoluene, technical grade	609-007-00-9	Carc.2; R45 Mut.3; R68 Repr.3; R62 T; R23/24/25 Xn; R48/22 N; R51-53
27253-28-7	Neodecanoic acid, lead salt	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
301-04-2	Acetic acid, lead(2+) salt	lead di(acetate)	082-005-00-8	Repr.1; R61 Repr.3; R62 Xn; R48/22 R33 N; R50-53
301-08-6	Hexanoic acid, 2-ethyl-, lead(2+) salt	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
50825-29-1	Cyclohexanecarboxylic acid, lead salt	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
598-63-0	Carbonic acid, lead(2+) salt (1:1)	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
602-01-7	2,3-dinitrotoluen	2,3-dinitrotoluene	609-050-00-3	Carc.2; R45 Mut.3; R68 Repr.3; R62 T; R23/24/25 Xn; R48/22 N; R50-53
606-20-2	Benzene, 2-methyl-1,3-dinitro-	2,6-dinitrotoluene	609-049-00-8	Carc.2; R45 Mut.3; R68 Repr.3; R62 T; R23/24/25 Xn; R48/22 R52-53
610-39-9	Benzene, 4-methyl-1,2-dinitro-	3,4-dinitrotoluene	609-051-00-9	Carc.2; R45 Mut.3; R68 Repr.3; R62 T; R23/24/25 Xn; R48/22 N; R51-53
61790-14-5	Naphthenic acid, lead salt	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
619-15-8	Benzene, 2-methyl-1,4-dinitro-	2,5-dinitrotoluene	609-055-00-0	Carc.2; R45 Mut.3; R68 Repr.3; R62 T; R23/24/25 Xn; R48/22 N; R51-53
625-45-6	methoxyacetic acid	methoxyacetic acid	607-312-00-1	Repr.2; R60-61 Xn; R22 C; R34
630-08-0	Carbon monoxide	carbon monoxide	006-001-00-2	F+; R12 Repr.1; R61 T; R23-48/23
63568-30-9	Naphthalenesulfonic acid, diisononyl-, lead(2+) salt	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
64741-41-9	Naphtha (petroleum), heavy straight-run	Naphtha (petroleum), heavy straight-run; Low boiling point naphtha	649-264-00-4	Carc.2; R45 Xn; R65
64741-53-3	Distillates (petroleum), heavy	Distillates (petroleum), heavy naphthenic; Unrefined or	649-053-00-7	Carc.1; R45

CasNo	Name	Synonym Group Name	Annex I No	Classification
	naphthenic	mildly refined baseoil		
64741-61-3	Distillates (petroleum), heavy catalytic cracked	Distillates (petroleum), heavy catalytic cracked; Heavy Fuel oil	649-010-00-2	Carc.2; R45
64741-64-6	Naphtha (petroleum), full-range alkylate	Naphtha (petroleum), full-range alkylate; Low boiling point modified naphtha	649-274-00-9	Carc.2; R45 Xn; R65
64741-65-7	Naphtha (petroleum), heavy alkylate	Naphtha (petroleum), heavy alkylate; Low boiling point modified naphtha	649-275-00-4	Carc.2; R45 Xn; R65
64741-66-8	Naphtha (petroleum), light alkylate	Naphtha (petroleum), light alkylate; Low boiling point modified naphtha	649-276-00-X	Carc.2; R45 Xn; R65
64741-69-1	Naphtha (petroleum), light hydrocracked	Naphtha (petroleum), light hydrocracked; Low boiling naphtha - unspecified	649-348-00-0	Carc.2; R45 Xn; R65
64741-70-4	Naphtha (petroleum), isomerization	Naphtha (petroleum), isomerization; Low boiling point modified naphtha	649-277-00-5	Carc.2; R45 Xn; R65
64741-84-0	Naphtha (petroleum), solvent-refined light	Naphtha (petroleum), solvent-refined light; Low boiling point modified naphtha	649-278-00-0	Carc.2; R45 Xn; R65
64741-88-4	Distillates (petroleum), solvent-refined heavy paraffinic	Distillates (petroleum), solvent-refined heavy paraffinic; Baseoil - unspecified	649-454-00-7	Carc.2; R45
64741-89-5	Distillates (petroleum), solvent-refined light paraffinic	Distillates (petroleum), solvent-refined light paraffinic; Baseoil - unspecified	649-455-00-2	Carc.2; R45
64741-92-0	Naphtha (petroleum), solvent-refined heavy	Naphtha (petroleum), solvent-refined heavy; Low boiling point modified naphtha	649-279-00-6	Carc.2; R45 Xn; R65
64741-95-3	Residual oils (petroleum), solvent deasphalted	Residual oils (petroleum), solvent deasphalted; Baseoil - unspecified	649-456-00-8	Carc.2; R45
64741-96-4	Distillates (petroleum), solvent-refined heavy naphthenic	Distillates (petroleum), solvent-refined heavy naphthenic; Baseoil - unspecified	649-457-00-3	Carc.2; R45
64741-97-5	Distillates (petroleum), solvent-refined light naphthenic	Distillates (petroleum), solvent-refined light naphthenic; Baseoil - unspecified	649-458-00-9	Carc.2; R45
64742-01-4	Residual oils (petroleum), solvent-refined	Residual oils (petroleum,) solvent-refined; Baseoil - unspecified	649-459-00-4	Carc.2; R45
64742-13-8	Distillates (petroleum), acid-treated middle	Distillates (petroleum), acid-treated middle; Gasoil - unspecified	649-216-00-2	Carc.2; R45
64742-14-9	Distillates (petroleum), acid-treated light	Distillates (petroleum), acid-treated light; Gasoil - unspecified	649-217-00-8	Carc.2; R45
64742-19-4	Distillates (petroleum), acid-treated light naphthenic	Distillates (petroleum), acid-treated light naphthenic; Unrefined or mildly refined baseoil	649-055-00-8	Carc.1; R45
64742-30-9	Distillates (petroleum), chemically neutralized middle	Distillates (petroleum), chemically neutralized middle; Gasoil - unspecified	649-219-00-9	Carc.2; R45
64742-35-4	Distillates (petroleum), chemically neutralized light naphthenic	Distillates (petroleum), chemically neutralized light naphthenic; Unrefined or mildly refined baseoil	649-061-00-0	Carc.1; R45
64742-38-7	Distillates (petroleum), clay-treated	Distillates (petroleum), clay-treated middle; Gasoil - unspecified	649-220-00-4	Carc.2; R45

CasNo	Name	Synonym Group Name	Annex I No	Classification
64742-41-2	Residual oils (petroleum), clay-treated	Residual oils (petroleum), clay-treated; Baseoil - unspecified	649-462-00-0	Carc.2; R45
64742-46-7	Distillates (petroleum), hydrotreated middle	Distillates (petroleum), hydrotreated middle; Gasoil - unspecified	649-221-00-X	Carc.2; R45
64742-48-9	Naphtha (petroleum), hydrotreated heavy	Naphtha (petroleum), hydrotreated heavy; Low boiling point hydrogen treated naphtha	649-327-00-6	Carc.2; R45 Xn; R65
64742-49-0	Naphtha (petroleum), hydrotreated light	Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha	649-328-00-1	Carc.2; R45 Xn; R65
64742-52-5	Distillates (petroleum), hydrotreated heavy naphthenic	Distillates (petroleum), hydrotreated heavy naphthenic; Baseoil - unspecified	649-465-00-7	Carc.2; R45
64742-53-6	Distillates (petroleum), hydrotreated light naphthenic	Distillates (petroleum), hydrotreated light naphthenic; Baseoil - unspecified	649-466-00-2	Carc.2; R45
64742-54-7	Distillates (petroleum), hydrotreated heavy paraffinic	Distillates (petroleum), hydrotreated heavy paraffinic; Baseoil - unspecified	649-467-00-8	Carc.2; R45
64742-55-8	Distillates (petroleum), hydrotreated light paraffinic	Distillates (petroleum), hydrotreated light paraffinic; Baseoil - unspecified	649-468-00-3	Carc.2; R45
64742-56-9	Distillates (petroleum), solvent-dewaxes light paraffinic	Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil - unspecified	649-469-00-9	Carc.2; R45
64742-57-0	Residual oils (petroleum), hydrotreated	Residual oils (petroleum), hydrotreated; Baseoil - unspecified	649-470-00-4	Carc.2; R45
64742-61-6	Slack wax (petroleum)	Slack wax (petroleum); Slack wax	649-244-00-5	Carc.2; R45
64742-62-7	Residual oils (petroleum), solvent-dewaxed	Residual oils (petroleum), solvent-dewaxed; Baseoil - unspecified	649-471-00-X	Carc.2; R45
64742-63-8	Distillates (petroleum), solvent-dewaxed heavy naphthenic	Distillates (petroleum), solvent-dewaxed heavy naphthenic; Baseoil - unspecified	649-472-00-5	Carc.2; R45
64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic	Distillates (petroleum), solvent-dewaxed heavy paraffinic; Baseoil - unspecified	649-474-00-6	Carc.2; R45
64742-73-0	Naphtha (petroleum), hydrodesulfurized light	Naphtha (petroleum), hydrodesulfurized light; Low boiling point hydrogen treated naphtha	649-329-00-7	Carc.2; R45 Xn; R65
64742-79-6	Gas oils (petroleum), hydrodesulfurized	Gas oils (petroleum), hydrodesulfurized; Gasoil - unspecified	649-222-00-5	Carc.2; R45
64742-80-9	Distillates (petroleum), hydrodesulfurized middle	Distillates (petroleum), hydrodesulfurized middle; Gasoil - unspecified	649-223-00-0	Carc.2; R45
64742-82-1	Naphtha (petroleum), hydrodesulfurized heavy	Naphtha (petroleum), hydrodesulfurized heavy; Low boiling point hydrogen treated naphtha	649-330-00-2	Carc.2; R45 Xn; R65
64742-86-5	Gas oils (petroleum), hydrodesulfurized heavy vacuum	Gas oils (petroleum), hydrodesulfurized heavy vacuum; Heavy Fuel oil	649-017-00-0	Carc.2; R45
64742-89-8	Solvent naphtha (petroleum), light aliph.	Solvent naphtha (petroleum), light aliph.; Low boiling point naphtha	649-267-00-0	Carc.2; R45 Xn; R65
64742-95-6	Solvent naphtha (petroleum), light arom.	Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified	649-356-00-4	Carc.2; R45 Xn; R65

CasNo	Name	Synonym Group Name	Annex I No	Classification
64743-01-7	Petrolatum (petroleum), oxidized	Petrolatum (petroleum), oxidized; Petrolatum	649-255-00-5	Carc.2; R45
65996-90-9	Tar, coal, low-temp.	Tar, coal, low-temp.; Coal oil	648-083-00-8	Carc.1; R45
68038-02-8	Castor oil, dehydrated, polymd.	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
68-12-2	Formamide, N,N-dimethyl-	N,N-dimethylformamide; dimethyl formamide	616-001-00-X	Repr.2; R61 Xn; R20/21 Xi; R36
68333-25-5	Distillates (petroleum), hydrodesulfurized light catalytic cracked	Distillates (petroleum), hydrodesulfurized light catalytic cracked; Cracked gasoil	649-439-00-5	Carc.2; R45
68442-95-5	Hexanoic acid, dimethyl-, lead(2+) salt, basic	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
68475-59-2	Alkanes, C3-4	Alkanes, C<{IND}>3-4<{/IND}>; petroleum gas	649-195-00-X	Carc.2; R45
68476-33-5	Fuel oil, residual	Fuel oil, residual; Heavy Fuel oil	649-024-00-9	Carc.2; R45
68476-40-4	Hydrocarbons, C3-4	Hydrocarbons, C<{IND}>3-4<{/IND}>; Petroleum gas	649-199-00-1	Carc.2; R45
68476-49-3	Hydrocarbons, C2-4, C3-rich	Hydrocarbons, C<{IND}>2-4<{/IND}>, C<{IND}>3<{/IND}>-rich; Petroleum gas	649-201-00-0	Carc.2; R45
68476-50-6	Hydrocarbons, C.gtoreq.5, C5-6-rich	Hydrocarbons, C¿5, C<{IND}>5-6<{/IND}>-rich; Low boiling point naphtha - unspecified	649-401-00-8	Carc.2; R45 Xn; R65
68476-85-7	Petroleum products, liquefied gas	Petroleum gases, liquefied; Petroleum gas	649-202-00-6	F+; R12 Carc.2; R45
68476-86-8	Petroleum products, liquefied gas, sweetened	Petroleum gases, liquefied, sweetened; Petroleum gas	649-203-00-1	F+; R12 Carc.2; R45
68477-31-6	Distillates (petroleum), catalytic reformer fractionator residue, low-boiling	Distillates (petroleum), catalytic reformer fractionator residue, low-boiling; Gasoil - unspecified	649-230-00-9	Carc.2; R45
68514-15-8	Gasoline, vapor-recovery	Gasoline, vapor-recovery; Low boiling point naphtha	649-269-00-1	Carc.2; R45 Xn; R65
68553-00-4	Fuel oil, no. 6	Fuel oil, No 6; Heavy Fuel oil	649-030-00-1	Carc.2; R45
68603-83-8	Fatty acids, C6-19-branched, basic lead and lead salts	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
68606-11-1	Gasoline, straight-run, topping-plant	Gasoline, straight-run, topping-plant; Low boiling point naphtha	649-270-00-7	Carc.2; R45 Xn; R65
70321-55-0	Lead, decanoate octanoate complexes	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
70657-70-4	1-Propanol, 2-methoxy-, acetate	2-methoxypropyl acetate	607-251-00-0	R10 Repr.2; R61 Xi; R37
71-43-2	Benzene	benzene	601-020-00-8	F; R11 Carc.1; R45 T; R48/23/24/25
72623-85-9	Lubricating oils, petroleum, C20-50, hydrotreated neutral oil-based, high-viscosity	Lubricating oils (petroleum), C<{IND}>20-50<{/IND}>, hydrotreated neutral oil-based, high-viscosity; Baseoil-unspecified	649-481-00-4	Carc.2; R45
72623-86-0	Lubricating oils, petroleum, C15-30, hydrotreated neutral oil-based	Lubricating oils (petroleum), C<{IND}>15-30<{/IND}>, hydrotreated neutral oil-based; Baseoil - unspecified	649-482-00-X	Carc.2; R45
72623-87-1	Lubricating oils, petroleum, C20-50, hydrotreated neutral oil-based	Lubricating oils (petroleum), C<{IND}>20-50<{/IND}>, hydrotreated neutral oil-based; Baseoil - unspecified	649-483-00-5	Carc.2; R45
7319-86-0	Octanoic acid, lead(2+) salt	lead compounds with the exception of those specified	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53

CasNo	Name	Synonym Group Name	Annex I No	Classification
		elsewhere in this Annex		
7428-48-0	Octadecanoic acid, lead salt	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
7439-92-1	Lead	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
74869-21-9	Lubricating greases	Lubricating greases; Grease	649-243-00-X	Carc.2; R45
74869-22-0	Lubricating oils	Lubricating oils; Baseoil - unspecified	649-484-00-0	Carc.2; R45
75-01-4	Ethene, chloro-	vinyl chloride; chloroethylene	602-023-00-7	F+; R12 Carc.1; R45
75-21-8	Oxirane	ethylene oxide; oxirane	603-023-00-X	F+; R12 Carc.2; R45 Mut.2; R46 T; R23 Xi; R36/37/38
75-28-5	Propane, 2-methyl- containing >0.1% butadiene	butane (containing ¿ 0.1 % butadiene (203-450-8)); isobutane (containing ¿ 0.1 % butadiene (203-450-8))	601-004-01-8	F+; R12 Carc.1; R45 Mut.2; R46
75-56-9	Oxirane, methyl-	propylene oxide; 1,2-epoxypropane; methyloxirane	603-055-00-4	F+; R12 Carc.2; R45 Mut.2; R46 Xn; R20/21/22 Xi; R36/37/38
7646-79-9	Cobalt chloride	cobalt dichloride	027-004-00-5	Carc.2; R49 Xn; R22 R42/43 N; R50-53
7758-97-6	Chromic acid, lead(2+) salt (1:1)	lead chromate	082-004-00-2	Carc.3; R40 Repr.1; R61 Repr.3; R62 R33 N; R50-53
7778-50-9	Chromic acid, dipotassium salt	potassium dichromate	024-002-00-6	Carc.2; R49 Mut.2; R46 T+; R26 T; R25 Xn; R21 Xi; R37/38-41 R43 N; R50-53
78-00-2	Plumbane, tetraethyl-	lead alkyls	082-002-00-1	Repr.1; R61 Repr.3; R62 T+; R26/27/28 R33 N; R50-53
79-01-6	Ethene, trichloro-	trichloroethylene; trichloroethene	602-027-00-9	Carc.2; R45 Mut.3; R68 R67 Xi; R36/38 R52-53
79-06-1	2-Propenamide	acrylamide; prop-2-enamide	616-003-00-0	Carc.2; R45 Mut.2; R46 Repr.3; R62 T; R25-48/23/24/25 Xn; R20/21 Xi; R36/38 R43
8006-61-9	Gasoline, natural	Gasoline, natural; Low boiling point naphtha	649-261-00-8	Carc.2; R45 Xn; R65
8007-45-2	Coal tar	Tar, coal; Coal tar	648-081-00-7	Carc.1; R45
8012-00-8	Pyrochlore, antimony lead yellow	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
8030-30-6	Naphtha	Naphtha; Low boiling point naphtha	649-262-00-3	Carc.2; R45 Xn; R65
8032-32-4	Ligroine	Ligroine; Low boiling point naphtha	649-263-00-9	Carc.2; R45 Xn; R65
8052-41-3	Stoddard solvent	Stoddard solvent; Low boiling point naphtha - unspecified	649-345-00-4	Carc.2; R45 Xn; R65
81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-	warfarin; (S)-4-hydroxy-3-(3-oxo-1-phenylbutyl)-2-benzopyrone; (R)-4-hydroxy-3-(3-oxo-1-phenylbutyl)-2-benzopyrone	607-056-00-0	Repr.1; R61 T; R48/25 R52-53
84066-99-9	Lead, C5-23-branched carboxylate octanoate complexes	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
84-74-2	Dibutyl phthalate	dibutyl phthalate; DBP	607-318-00-4	Repr.2; R61 Repr.3; R62 N; R50
86290-81-5	Gasoline	Gasoline; Low boiling point naphtha - unspecified	649-378-00-4	Carc.2; R45 Xn; R65
87741-01-3	Hydrocarbons, C4	Hydrocarbons, C<{IND}>4<{/IND}>; Petroleum gas	649-113-00-2	Carc.2; R45
9008-26-8	Resin acids and Rosin acids, lead salts	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
90431-27-9	Lead, C8-10-branched fatty acids C9-11-neofatty acids naphthenate complexes, overbased	lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53
90431-32-6	Lead, 2-ethylhexanoate isooctanoate	lead compounds with the exception of those specified	082-001-00-6	Repr.1; R61 Repr.3; R62 Xn; R20/22 R33 N; R50-53

CasNo	Name	Synonym Group Name	Annex I No	Classification
	complexes, basic	elsewhere in this Annex		
92045-42-6	Lubricating oils (petroleum), C17-35, solvent-extd., dewaxed, hydrotreated	Lubricating oils (petroleum), C<{IND}>17-35<{/IND}>, solvent-extd., dewaxed, hydrotreated; Baseoil - unspecified	649-497-00-1	Carc.2; R45
92045-43-7	Lubricating oils (petroleum), hydrocracked nonarom. solvent-deparaffined	Lubricating oils (petroleum), hydrocracked nonarom. solvent-deparaffined; Baseoil - unspecified	649-498-00-7	Carc.2; R45
92045-53-9	Naphtha (petroleum), hydrodesulfurized light, dearomatized	Naphtha (petroleum), hydrodesulfurized light, dearomatized; Low boiling point naphtha - unspecified	649-383-00-1	Carc.2; R45 Xn; R65
92062-09-4	Slack wax (petroleum), hydrotreated	Slack wax (petroleum), hydrotreated; Slack wax	649-247-00-1	Carc.2; R45
92062-15-2	Solvent naphtha (petroleum), hydrotreated light naphthenic	Solvent naphtha (petroleum), hydrotreated light naphthenic; Low boiling point hydrogen treated naphtha	649-341-00-2	Carc.2; R45 Xn; R65
93572-35-1	Hydrocarbons, C7-12, C>9-arom.-rich, reforming heavy fraction	Hydrocarbons, C<{IND}>7-12<{/IND}>, C<{IND}>>9<{/IND}>-arom.-rich, reforming heavy fraction; Low boiling point cat-reformed naphtha	649-313-00-X	Carc.2; R45 Xn; R65
93572-43-1	Lubricating oils (petroleum), base oils, paraffinic	Lubricating oils (petroleum), base oils, paraffinic; Baseoil - unspecified	649-501-00-1	Carc.2; R45

Appendix 5 List of potential CMR substances present in consumer preparations

Cas-number	Name	EC-number	IARC	NTP	GR-carcinogens	GR-reproductive	Scorecard reprotoxic	Scorecard developmental	Scorecard carcinogenic	Germany	Niosh
14464-46-1	cristobalite (see silica, crystalline [respirable size])			K carcinogen [1]	carcinogenic						carcinogenic
14808-60-7	quartz (see silica, crystalline [respirable size])		carc. cat. 1	K carcinogen	carcinogenic						carcinogenic
140-67-0	1-allyl-4-methoxybenzene								carcinogenic		
81-15-2	5-tert-butyl-2,4,6-trinitro-m-xylol	201-329-4								carc. cat. 3	
8052-42-4	asphalt (petroleum) fumes								carcinogenic		carcinogenic
25013-16-5	butylated hydroxyanisole (bha)		carc. cat. 2b	R carcinogen					carcinogenic		
81-88-9	c.i. food red 15								carcinogenic		
1333-86-4	carbon black (exceeding 0.1% pahs)		carc. cat. 2b						carcinogenic		carcinogenic
3468-63-1	d & c orange no. 17								carcinogenic		
554-13-2	lithium carbonate					R62, R61		developmental			
7447-41-8	lithiumchloride					R62, R61					
7439-96-5	mangaan en -verbindingen					R62, R63					
139-13-9	nitrilotriacetic acid and its salts		carc. cat. 2b	R carcinogen					carcinogenic		
18662-53-8	nitrilotriacetic acid, trisodium salt monohydrate								carcinogenic		
10024-97-2	nitrous oxide (N_2O)					R62, R63					
2832-19-1	n-methylolchloracetamid	220-598-9								muta. cat. 3	
12174-11-7	palygorskite (attapulgite) (long fibres, > 5 micrometers)		carc. cat. 2b						carcinogenic		
77-09-8	phenolphthalein		carc. cat. 2b	R carcinogen					carcinogenic		
68-26-8	retinol / retinyl esters, when in daily dosage in excess of 10,000 iu,or 3,000 retinol equivalents							developmental			
1317-95-9	silica, crystalline tripoli										carcinogenic
60676-86-0	silica, fused										carcinogenic
13463-67-7	titanium dioxide										carcinogenic
129-06-6	warfarin sodium							developmental			

1: K carcinogen: known human carcinogen
2: R carcinogen: reasonably anticipated to be a human carcinogen

Appendix 6 The use of 2-ethoxyethanol in consumer preparations

Household products database
According to the Household products database, 2-ethoxyethanol is not used in consumer preparations.

Swiss database
According to the Swiss products database, 2-ethoxyethanol is not used in consumer preparations.

SPIN database
The following use categories for 2-ethoxyethanol were stated in SPIN. However, these uses are a combination of industrial and consumer use.

Use category (UC62)

Country	Year	Code		# prep	Tonnes
DK	2001	D59	Paints, lacquers and varnishes	51	78.0
DK	2001	A43	Process regulators	12	17.0
DK	2001	B48	Solvents	5	2.0
N	2001	B48	Solvents	5	1.4
DK	2001	C09	Cleaning/washing agents	6	1.0
N	2001	D59	Paints, lacquers and varnishes	15	0.4
DK	2001	A02	Adhesives, binding agents	5	0.0
DK	2001	B14	Corrosion inhibitors	4	0.0
DK	2001	B20	Fillers	6	0.0
DK	2000	D59	Paints, lacquers and varnishes	53	85.9
DK	2000	A43	Process regulators	16	18.6
DK	2000	A38	Pesticides, agricultural	5	5.1
DK	2000	B48	Solvents	5	3.5
DK	2000	C09	Cleaning/washing agents	6	2.3
N	2000	B48	Solvents	4	1.2
S	2000	D59	Paints, lacquers and varnishes	15	1.0
N	2000	D59	Paints, lacquers and varnishes	19	0.6
DK	2000	B14	Corrosion inhibitors	4	0.2
DK	2000	A02	Adhesives, binding agents	5	0.1
DK	2000	B20	Fillers	6	0.0
S	2000	B55	Others	4	0.0
S	1999	D59	Paints, lacquers and varnishes	28	2.0
S	1999	B55	Others	3	0.0

Appendix 7 The use of benzene in consumer preparations

Household products database
According to the Household products database, benzene is used in 3 consumer preparations.

Brand	Category	Form	Percent
Champion Sprayon Flush Off Degreaser	Auto products	aerosol	<1
Glidden Ultra-Hide Alkyd Semi-Gloss Interior, Intermediate Tint Base	Home maintenance	liquid	0.1-1.0
Glidden Ultra-Hide Alkyd Semi-Gloss Interior, Deep Tint Base	Home maintenance	liquid	0.1-1.0

Swiss database
Benzene is not used in consumer preparations in Switzerland because it is on list 1.

SPIN database
The following use categories for benzene were stated in SPIN. However, these uses are a combination of industrial and consumer use.

Use category (UC62)

Country	Year	Code		# prep	Tonnes
N	2001	B27	Fuels	14	49685.7
DK	2001	B27	Fuels	7	20129.0
DK	2001	B31	Impregnation materials	70	860.0
DK	2001	B48	Solvents	289	23.0
DK	2001	C09	Cleaning/washing agents	391	5.0
DK	2001	A28	Fuel additives	17	1.0
DK	2001	B34	Laboratory chemicals	4	1.0
N	2001	B48	Solvents	5	0.0
N	2001	D59	Paints, lacquers and varnishes	8	0.0
DK	2001	A02	Adhesives, binding agents	218	0.0
DK	2001	A38	Pesticides, agricultural	25	0.0
DK	2001	A43	Process regulators	267	0.0
DK	2001	A54	Welding and soldering agents	4	0.0

DK	2001	B01	Absorbents and Adsorbents	7	0.0
DK	2001	B04	Anti-condensation agents	6	0.0
DK	2001	B06	Anti-set-off and anti-adhesive agents	21	0.0
DK	2001	B10	Colouring agents	23	0.0
DK	2001	B14	Corrosion inhibitors	207	0.0
DK	2001	B15	Cosmetics	11	0.0
DK	2001	B20	Fillers	151	0.0
DK	2001	B32	Insulating materials	8	0.0
DK	2001	B35	Lubricants and additives	100	0.0
DK	2001	B42	Photochemicals	4	0.0
DK	2001	B45	Reprographic agents	83	0.0
DK	2001	B47	Softeners	6	0.0
DK	2001	B50	Surface-active agents	49	0.0
DK	2001	B52	Viscosity adjusters	11	0.0
DK	2001	B53	Vulcanising agents	5	0.0
DK	2001	B55	Others	34	0.0
DK	2001	C13	Construction materials	60	0.0
DK	2001	C39	Non-agricultural pesticides and preservatives	7	0.0
DK	2001	D56	Cutting fluids	22	0.0
DK	2001	D58	Grinding materials	5	0.0
DK	2001	D59	Paints, lacquers and varnishes	1806	0.0
DK	2001	D61	Surface treatment	209	0.0
S	2000	B27	Fuels	51	50953.0
N	2000	B27	Fuels	16	49700.1
DK	2000	B27	Fuels	7	20130.5
DK	2000	B48	Solvents	282	44.6
DK	2000	C09	Cleaning/washing agents	372	12.6
DK	2000	D59	Paints, lacquers and varnishes	1378	2.3
S	2000	B48	Solvents	13	2.0
DK	2000	B31	Impregnation materials	70	1.4
DK	2000	B34	Laboratory chemicals	4	1.3
DK	2000	A28	Fuel additives	16	1.2
DK	2000	B14	Corrosion inhibitors	197	1.1
DK	2000	A02	Adhesives, binding agents	206	0.5
DK	2000	A38	Pesticides, agricultural	38	0.5
DK	2000	B04	Anti-condensation agents	6	0.4
DK	2000	B50	Surface-active agents	52	0.3
DK	2000	B55	Others	36	0.3
DK	2000	B35	Lubricants and additives	99	0.2
DK	2000	D61	Surface treatment	185	0.2
DK	2000	A43	Process regulators	247	0.1
DK	2000	B06	Anti-set-off and anti-adhesive agents	80	0.1

DK	2000	B20	Fillers	139	0.1
DK	2000	B42	Photochemicals	4	0.0
DK	2000	B45	Reprographic agents	107	0.0
DK	2000	D56	Cutting fluids	21	0.0
DK	2000	B10	Colouring agents	24	0.0
DK	2000	C39	Non-agricultural pesticides and preservatives	7	0.0
DK	2000	B52	Viscosity adjusters	13	0.0
DK	2000	C13	Construction materials	35	0.0
N	2000	B48	Solvents	5	0.0
DK	2000	B15	Cosmetics	11	0.0
DK	2000	B32	Insulating materials	9	0.0
DK	2000	B47	Softeners	7	0.0
DK	2000	B49	Stabilisers	4	0.0
DK	2000	B53	Vulcanising agents	5	0.0
DK	2000	B01	Absorbents and Adsorbents	7	0.0
S	2000	A02	Adhesives, binding agents	10	0.0
S	2000	A33	Intermediates	6	0.0
S	2000	B35	Lubricants and additives	3	0.0
S	2000	B53	Vulcanising agents	5	0.0
S	2000	B55	Others	15	0.0
S	2000	C09	Cleaning/washing agents	5	0.0
S	2000	D59	Paints, lacquers and varnishes	8	0.0
S	1999	B27	Fuels	56	53555.0
S	1999	B48	Solvents	12	2.0
S	1999	A02	Adhesives, binding agents	11	1.0
S	1999	A33	Intermediates	6	0.0
S	1999	B53	Vulcanising agents	6	0.0
S	1999	B55	Others	17	0.0
S	1999	D59	Paints, lacquers and varnishes	13	0.0

Appendix 8 The use of trichloroethylene in consumer preparations

Household products database
According to this database, trichloroethylene is used in 2 consumer preparations.

Brand	Category	Form	Percent
Trouble Free Rust Buster	Auto products	aerosol	unknown
Lectra Clean - Aerosol	Home inside	aerosol	90-99

Swiss list of toxic consumer preparations (List 2).

Brand	Category
Adhesan	Shoe and leather
Agip F.1 Fin 332/F	Drive, lubricant and heat-conducting
Agip F.1 Fin 360/F	Drive, lubricant and heat-conducting
Alders Fleckenwasser	Cleaning product
Altene D 6	Solvent, degreaser, thinner, strip
Anti-rapina	various
Aseol kettolub 14-60 spray	Drive, lubricant and heat-conducting
Asperg Fix	Glues, sealant
Autoplast	Drive, lubricant and heat-conducting
Belinzone polierwachs	Cleaning product
Burris Fleckenwasser	Cleaning product
Carfa-Tipp-Clean	Cleaning product
Chlorkautschuk verdunner Fehr	Solvent, degreaser, thinner, strip
Cleanersol	Cleaning product
Colle Mastice Gutta	Glues, sealant
Cristall-Wasser	Cleaning product
Curilin/RSO	Glues, sealant
Drahtseilschmiermittel	Drive, lubricant and heatc-onducting
Drowapur	Cleaning product
Ducolux-Abbeizer N 39800	Solvent, degreaser, thinner, strip
Eau a detacher Alca	Cleaning product
F 45	Solvent, degreaser, thinner, strip
F 45 Lube Nr. 1, 2 und S	Surface treatment
Fabu	Cleaning product
Farbweg Silikron-Abbeizmittel	Solvent, degreaser, thinner, strip
Ferro Elastic Weiss, Spachtel, comp. A	Glues, sealant
First Fit Schlosreiniger	Cleaning product

List not completed – only examples

SPIN database
The following use categories for benzene were stated in SPIN. However, these uses are a combination of industrial and consumer use.

Use category (UC62)

Country	Year	Code		# prep	Tonnes
DK	2001	C09	Cleaning/washing agents	16	194.0
DK	2001	A02	Adhesives, binding agents	9	7.0
N	2001	C09	Cleaning/washing agents	7	3.3
N	2001	A02	Adhesives, binding agents	6	1.2
S	2000	C09	Cleaning/washing agents	9	485.0
DK	2000	C09	Cleaning/washing agents	16	286.3
S	2000	A02	Adhesives, binding agents	9	10.0
DK	2000	A02	Adhesives, binding agents	9	9.3
N	2000	C09	Cleaning/washing agents	5	5.7
N	2000	A02	Adhesives, binding agents	4	1.1
S	1999	C09	Cleaning/washing agents	10	1022.0
S	1999	A02	Adhesives, binding agents	9	8.0