

Trade Union Priority List for REACH Authorisation

Trade Union Priority List for REACH Authorisation ■ Trade Union Priority List for REACH Authorisation



etui.
european trade union institute



■ Version 2.0, June 2010
With main uses indicated in each entry



Trade Union Priority List for REACH Authorisation

■ Trade Union Priority List for REACH Authorisation

■ Version 2.0, June 2010
With main uses indicated in each entry

Foreword

REACH, the new EU regulation to control the trade and use of chemicals came into effect in June 2007. It requires manufacturers and importers of chemicals to register them with the European Chemicals Agency (ECHA) to show that they can be used safely. For chemicals of very high concern included in the Authorisation List, industrialists must also get authorisation for each use in order to continue marketing them. Authorisation is a procedure designed to identify the most hazardous chemicals currently on the European market, control the risks arising from their use and replace them with safer alternatives. There are thought to be between 1 500 and 2 000 substances of very high concern on the European market.

The European Trade Union Confederation took a very clear stance in favour of this reform because, by encouraging industry to develop safer substances, REACH combines increased competitiveness for European industry with improved protection of workers, consumers and the environment.

That is why the ETUC has consistently worked to give a constructive input to REACH throughout its development via its conferences, a wide array of publications and its presence on the Management Board and all committees of the European Chemicals Agency (ECHA).

■ **Trade Union Priority List for REACH Authorisation,**
Version 2.0, June 2010

Authors: Tatiana Santos, Dolores Romano and Rafael Gadea, ISTAS
Project coordinator: Tony Musu, ETUI

Printed in Belgium
Legal deposit: M-13412-2009
ISBN: 978-84-613-0098-3

Printed on recycled paper 



Almost two years after REACH entry into operation, ECHA has only identified 30 substances as candidates for authorisation and none of them has yet been included in the Authorisation List.

At that pace, it will take more than 100 years to tackle all substances of very high concern currently present in our workplaces and our environment. ETUC believes that this very low-key start for REACH authorisation could put the entire procedure's credibility on the line and undermine REACH's substitution aims.

In March 2009, ETUC published the Trade Union Priority List to feed into the debate on the choice of substances of very high concern. The purpose of the updated version presented here is still to help the Authorities identify the most urgent substances for inclusion in the Candidate List and, eventually later, in the Authorisation List.

The ETUC is convinced that including the union-listed chemicals in the Authorisation List would cut the incidence of chemical-related occupational diseases and the attendant costs for the community, workers and industry itself.

Finally, a debt of thanks is due to all those involved in producing the Trade Union Priority List: the researchers from ISTAS and from the ETUC's Research Institute, the ETUI, but also all the trade union experts on chemicals all over Europe who worked on this project.

Joël Decaillon

Deputy General Secretary, European Trade Union Confederation

Laurent Vogel

Director, ETUI Health and Safety Department

Philippe Pochet

Director, European Trade Union Institute

Executive Summary

The purpose of the Trade Union Priority List is to contribute to the practical implementation of REACH, in particular the authorisation procedure by proposing Substances of Very High Concern (SVHC) which from a union perspective should have priority for inclusion in the Candidate List and potentially in the Authorisation List.

For SVHC identification, the Trade Union Priority List also takes into consideration additional inherent hazard properties not explicitly mentioned in REACH article 57 but which are considered to be of "equivalent level of concern" (i.e. covered by Article 57(f)).

The chemicals considered as SVHC in the Trade Union Priority List are therefore CMRs¹ category 1A, 1B or 2 listed in Annex VI of Regulation 1272/2008, carcinogens classified 1, 2A or 2B by IARC, PBT/vPvB² substances listed in the framework of the OSPAR Convention and by the European Technical Committee on New and Existing Substances, known and suspected endocrine disruptors listed in the Community Strategy for Endocrine Disruptors, neurotoxic substances listed by Vela et al (2003) and sensitisers listed in the Annex VI of Regulation 1272/2008 and the "REACH allergens" listed by Friedhelm et al. (2006).

All chemicals included in the Trade Union Priority List are High Production Volume Chemicals (HPVC) listed in ESIS (European Chemical Substances Information System) or covered by a SIEF (Substance Information Exchange Forum) publicly known by March 2010 and expected to be registered by the first registration deadline. As a consequence they also meet the criteria to be eventually prioritised in the Authorisation List.



¹ Carcinogens, Mutagens and toxics for Reproduction.

² Persistent, Bioaccumulative and Toxic substances and very Persistent and very Bioaccumulative substances.

But where the union list goes further is in ranking chemicals by reference to their intrinsic (eco) toxicological properties, and identifying those that cause recognised occupational diseases at EU level. The European Risk Ranking Method (EURAM) for ranking the HPVC by scores has been adapted to cover all chemicals considered to be SVHC. The highest score (10 points) was attributed to CMRs category 1A or 1B and the lowest (7 points) to sensitisers, neurotoxins and suspected endocrine disruptors.

In the Trade Union's view the most urgent SVHC to be included in the Candidate List are the ones which accumulate the criteria to be identified as SVHC and, in particular, those which according to the Commission Recommendation on Occupational Diseases are known to cause recognised work-related diseases at Community level.

The resulting Trade Union List includes 568 substances covered by 334 HPVC/SIEF entries ordered by score. 209 out of these entries are substances or groups of substances identified as causative agents for recognised occupational diseases and 63 entries are substances or group of substances that cause diseases suspected of being occupational in origin.

Although available information on occupational diseases is mentioned for each entry, the scoring is only based on the intrinsic properties of the substances (i.e. hazard driven) and does not affect the ranking. ETUC, however, suggests that occupational diseases linked to SVHC should be taken into account for both their inclusion in the Candidate List and their prioritisation in the Authorisation List.

The ETUC believes that including the union-listed chemicals in the Candidate List will allow professional users to get more information on their uses. If they are subsequently prioritised in the Authorisation List (or subject to restrictions), it would surely promote the development of safer alternatives and cut both the incidence of chemical-related occupational diseases and the attendant costs for the community, workers and industry itself.

Index

1. INTRODUCTION	9
2. BACKGROUND	11
2.1. The authorisation procedure in REACH	11
2.2. Existing lists of hazardous chemicals	15
3. METHODOLOGY	16
3.1. Identification of chemicals considered as SVHC	17
3.1.1. Carcinogens, Mutagens and Reprotoxins (CMR)	18
3.1.2. Persistent, Bioaccumulative and Toxic substances (PBT) and very Persistent and very Bioaccumulative substances (vPvB)	20
3.1.3. Substances of equivalent level of concern	22
3.2. Prioritisation criteria and starting pool of substances	27
3.3. Definition of scores for each criterion	29
3.4. Development of the list	31
3.4.1. Ordering by score	31
3.4.2. Exclusion of exemptions	31
3.4.3. Grouping of substances	32
3.4.4. Inclusion of Refractory Ceramic Fibres (RCF)	32
3.4.5. Additional information provided in the TU List	33
4. RESULTS	35

5. DISCUSSION	36
5.1. Lack of information	36
5.1.1. Toxicity information	36
5.1.2. Production Volume information	37
5.1.3. Information on occupational exposure	38
5.1.4. Wide dispersive use information	39
5.1.5. Updated information	40
5.2. SIN List & Member States List	41
5.3. Use of the Candidate List	43
5.4. Future prioritisation parameters	43
5.5. Future equivalent concerns	44
6. CONCLUSIONS	45
ANNEX I: Trade Union Priority List	47
ANNEX II: Acronyms	116

1. Introduction

On the 1st of June of 2007, a new EU regulation for chemicals called REACH³ (Registration, Evaluation, restriction and Authorisation of Chemicals) came into force in the 27 EU Member States and in the European Economic Area (EEA). REACH has the potential to considerably impact on the protection of workers who are exposed to hazardous substances in several industrial sectors and especially to reduce the number of occupational diseases caused by chemicals in the future⁴.

Prioritising substances subject to regulation has become a need for many governments or supra-governmental organizations which aim at implementing legislative actions to limit or prohibit the use of certain chemicals considered particularly dangerous to human health or to the environment⁵.

This is the aim of Annex XIV, the list of substances subject to authorisation under the REACH Regulation:

“A manufacturer, importer or downstream user shall not place a substance on the market for a use or use it himself if that substance is included in Annex XIV”⁶.

³ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. [Official Journal L 136 of 29.5.2007].

⁴ Pickvance S et al. The impact of REACH on occupational health. University of Sheffield and ETUI, 2005.

⁵ Institute for Environment and Health. A review of prioritisation methodologies for screening chemicals with potential human health effects as result of low level environmental exposure. Leicester 2004. <http://www.silsoe.cranfield.ac.uk/ieh/pdf/W13.pdf>

⁶ Art. 56. REACH. EC 1907/2006.

“The aim of authorisation is to ensure the good functioning of the internal market while assuring that the risks from substances of very high concern are properly controlled and that these substances are progressively replaced by suitable alternative substances or technologies where these are economically and technically viable.”⁷

Almost two years after REACH entry into operation, ECHA⁸ has only identified 30 substances as candidates for authorisation⁹, 7 out of these 30 candidates have been recommended to undergo an authorisation procedure¹⁰ but none of them has yet been included in the Authorisation List.

At that pace, it will take 60 years to have the 900 substances which automatically meet the criteria for being identified as SVHC¹¹ on the Candidate List and more than 100 years to tackle the 1500plus substances of very high concern currently present in our workplaces and our environment.

The aim of the Trade Union Priority List and its prioritisation methodology is to help the Authorities identify the most urgent Substances of Very High Concern for inclusion in the Candidate List and, eventually later, in the Annex XIV (the Authorisation List).

In the Trade Unions' view, the most urgent substances for inclusion in the authorisation list are the ones which fulfil the criteria to be identified as SVHC, are being widely used at the workplace and, in particular, those which are known to cause recognised occupational diseases at Community level. If the substances proposed by Trade Unions are included in the Candidate List, professional users will get more information on their uses in the form of a safety data sheet. Like any consumers, they will also have the right to be informed about the presence of those SVHC in articles. In addition, if those substances are prioritised in the Authorisation List, the development of safer alternatives will be promoted and the occupational diseases they cause will be reduced.

⁷ Art. 55. REACH. EC 1907/2006

⁸ ECHA: European Chemicals Agency. <http://echa.europa.eu/>

⁹ http://www.echa.europa.eu/chem_data/candidate_list_table_en.asp

¹⁰ http://www.echa.europa.eu/chem_data/authorisation_process/annex_xiv_rec_en.asp

¹¹ See the official list of hazardous substances with a harmonized classification and labeling at the Community level in Annex VI of Regulation (EC) No 1272/2008, so called CLP Regulation (former Annex I of Directive 67/548/EEC)

2. Background

2.1. The authorisation procedure in REACH

Under REACH, the use of substances of very high concern is subjected to authorisation on a case-by-case basis. In order to obtain an authorisation, the applicant has to demonstrate that the risks related to the use of the substance concerned are “adequately controlled”. If that is not the case, authorisation may nonetheless be granted if it can be demonstrated that the risks are outweighed by socio-economic benefits and that the substances cannot be replaced by any suitable alternative substances or technologies. Authorisations are time-limited and may affect potentially between 1,500 and 2,000 substances.

According to REACH **article 57**, substances of very high concern include substances which are:

- Carcinogenic, Mutagenic or toxic to Reproduction (CMR) classified in category 1A or 1B according to 1272/2008 Regulation,
- Persistent, Bioaccumulative and Toxic (PBT) or very Persistent and very Bioaccumulative (vPvB) according to the criteria in Annex XIII of the REACH Regulation, and/or
- identified, on a case-by-case basis, from scientific evidence as causing probable serious effects to humans or the environment of an equivalent level of concern as those above e.g. endocrine disrupters.

The authorisation process comprises four steps. Industry has obligations in the third step, but interested parties (Member States, industrialists, NGOs, trade unions, etc.) can submit their comments in steps 1 and 2.

Step 1: Identifying substances of very high concern and including them in the candidate list

Substances of very high concern are identified by the Member State Competent Authorities or the ECHA (on behalf of the European Commission) by preparing a dossier – known as an “Annex XV dossier” – for each substance proposed. Interested parties can comment on substances for which a dossier has been prepared. This procedure results in the Agency’s Member State Committee drawing up a list of substances identified as of “very high concern”, and therefore potentially subject to authorization (the “candidate list”). There must be unanimous agreement in the Member State Committee for a proposed substance to be put on the candidate list. In the event of disagreement over a substance, the European Commission will decide by Comitology procedure. The candidate list must be published and periodically updated by the Agency.

Step 2: “Prioritising” substances in the candidate list and including Annex XIV substances

The Agency (via its Member State Committee) then has to adopt an opinion to recommend to the Commission which of the substances of very high concern on the candidate list should be regarded as priority for authorization. The Regulation however requires priority shall normally to be given to substances that are persistent, bioaccumulative and toxic (PBT), very persistent and very bioaccumulative (vPvB), those that have wide dispersive uses or that are produced in high volumes.

The number of “prioritized” substances – i.e., included in the list of substances that should be subject to authorization (Annex XIV of REACH) – may not exceed the Agency’s capacity to handle applications within the time provided.

The interested parties can submit comments during this procedure. The Commission then takes the following final decisions through a Comitology procedure:

- whether or not a substance recommended by the Agency will be subject to authorization;
- which uses of the substances included in Annex XIV will not need authorisation (e.g. because sufficient controls established by other legislation are already in place);
- the “sunset date” by when a substance can no longer be used without authorisation.

Step 3: Applications for Authorisation by industry

Applications for authorisation need to be made within the deadlines set for each use not exempted from the Authorisation requirement.

They must include among other information:

- a Chemical Safety Report covering risks related to those properties that caused the substance to be included in the authorisation system (unless already submitted as part of the registration);
- an analysis of possible alternative substances or technologies including, where appropriate, information on research and development foreseen or already in progress to develop such alternatives.

If this analysis reveals that there is a suitable alternative, the applicant must submit a substitution plan, explaining how he intends to replace the substance by the alternative. The suitability of available alternatives is assessed taking into account all relevant aspects, including whether the alternative results in reduction of overall risks and is technically and economically feasible.

An applicant can include a socio-economic analysis in his application. He must do so if he is unable to demonstrate adequate control of risks and where no suitable alternative exists. A fee is payable for each application, which may amount to as much as 50,000 euros.

The ECHA provides expert opinions for all applications via its Risk Assessment Committee and its Socio-Economic Analysis Committee tasked with preparing opinions. The applicant can comment on these opinions.

Step 4: Granting of authorisations by the European Commission

Authorisations will be granted if the applicant can demonstrate that the risk from the use of the substance is adequately controlled, even where there is a safer alternative substance or technology. The “adequate control route” does not apply to substances for which it is not possible to determine thresholds and substances with PBT or vPvB properties.

If the risk is not adequately controlled, an authorisation may still be granted if it is proven that the socio-economic benefits outweigh the risks and there are no suitable alternative substances or technologies.

Downstream users may only use such substances for uses which have been authorised. For this they must either:

1. obtain the substance from a company that was granted an authorisation for that use. In this case, they must stay within the conditions of that authorisation, and notify the Agency that they are using an authorised substance; or
2. apply themselves for authorisations for their own uses.

All authorisations will be reviewed after a certain time-limit, set on a case-by-case basis.



2.2. Existing lists of hazardous chemicals

Several lists of extremely hazardous chemicals developed by government agencies or non governmental organisations with different purposes do exist, with the common denominator of containing those substances that are considered of special concern because of their negative effects on human health or environment.

These lists of hazardous substances are available on their websites:

- United States Environmental Protection Agency (US-EPA): Extremely Hazardous Substance List¹²
- Danish- Environmental Protection Agency (EPA): List of Undesirable Substances¹³
- Canadian-EPA: Priority Substances List¹⁴
- Finnish Environment Institute: Proposal for a Selection of National Priority Substances¹⁵
- KEMI-PRIO: PRIO database¹⁶

It is also worth mentioning that in the framework of REACH authorisation procedures, the following two lists have been developed:

- SIN List 1.1¹⁷
- Member State's informal expert group (MS List)¹⁸: Pre-screening of SVHCs for potential future inclusion in the Candidate List

¹² <http://www.epa.gov/EPA-WATER/1994/October/Day-12/pr-14.html>

¹³ <http://glwww.mst.dk/homepage/>

¹⁴ http://www.ec.gc.ca/CEPARegistry/subs_list/Priority.cfm

¹⁵ <http://www.ymparisto.fi/download.asp?contentid=15659&lan=en>

¹⁶ http://www.kemi.se/templates/PRIOEngframes____4144.aspx

¹⁷ <http://www.chemsec.org/list/>

¹⁸ The Netherlands, Germany, Austria, France, Sweden, Denmark

3. Methodology

The steps described hereunder have been followed in order to draw up the Trade Union Priority List:

- | | |
|--|--|
| 1. Identification of chemicals considered as SVHC > | CMRs, PBTs, vPvBs, EDCs, Neurotoxicants, Sensitisers |
| 2. Prioritisation criteria and starting pool of substances > | HPVC, SIEF, health and environment effects |
| 3. Definition of scores for each criterion > | Based on the EURAM criteria |
| 5. Developing the list > | Ordering by score
Exclusion/Inclusion/grouping substances
Identification of substances linked to occupational diseases, to Candidate List and/or classified as hazardous in the EU |

FINAL LIST



3.1. Identification of chemicals considered as SVHC

There are more than 100,000 substances listed in the European market. Millions of European workers are therefore exposed to chemical substances on a daily basis, not only in the sector manufacturing them but also in the many downstream sectors where these substances are used. It is estimated that around one in three of all occupational diseases recognised in Europe each year is due to exposure to hazardous chemicals¹⁹.

From a Trade Union point of view, several aspects should be considered when prioritising substances for regulation, such as intrinsic hazard, relation with occupational diseases and human or environmental exposure.

However, there is little or incomplete information on most of these factors. For example, under the previous EU legislation on chemicals, EU Member States have completed only 138 risk assessment reports on individual substances with a wide set of toxicity and ecotoxicity data. Moreover, EU registers on occupational diseases offer data on only a limited number of substances related to occupational diseases and data on environmental exposure is based mainly on estimations and do not cover all European countries²⁰.

Considering the lack of real exposure data, it seems necessary to make an estimation of the exposure levels.

Occupational and environmental exposure could be estimated from the volume of production of the given substance, assuming that substances with high production volume will be present in higher amounts at workplaces and will end up in different environmental compartments in higher amounts.

¹⁹ Musu T. REACHing the workplace. How workers stand to benefit from the new European policy on chemical agents. European Trade Union Technical Bureau for Health and Safety, 2006

²⁰ – Ex-ECB. Summary of Existing Chemicals Risk Assessments. Ex European Chemicals Bureau (Ex-ECB), European Commission. Available at: <http://ecb.jrc.ec.europa.eu/documentation/>. Accessed October 2009.
– FIOH International Information System on Occupational Exposure to Carcinogens. Helsinki: Finnish Institute of Occupational Health, 1998. Available at: <http://www.ttl.fi/Internet/English/Organization/Collaboration/Carex/>. Accessed October 2009.
– European Commission. Commission Recommendation (19/09/2003) concerning the European schedule of occupational diseases. C(2003) 3297 final. Brussels: European Commission, 2003.
– EEA. European Pollutant Release and Transfer Register (E-PRTR). Copenhagen: European Environment Agency. Available at: <http://prtr.ec.europa.eu/> Accessed February 2010.

The most reliable information that can be used to set up the priority list is intrinsic hazardous properties of substances. From a Trade Union point of view, the most worrying substances on a long term basis are those that cause irreversible damage to workers' health and to the environment.

Occupational health and preventive environmental care are based on the assumption that the harm caused by a substance depends on the substance toxicity and the exposure, and therefore, the implementation of reduction and control measures may prevent or at least reduce occupational health diseases and damage to the environment. However, some groups of substances are of special concern due to the seriousness or irreversible nature of their effects, their consequences for society and the difficulty in performing concentration-based risk assessments. Those are substances which may bioaccumulate, be persistent or may cause damage at very low levels or even at any level of exposure, such as:

- **Persistent, Bioaccumulative and Toxic substances and very Persistent and very Bioaccumulative substances (PBT & vPvB)**
- **Carcinogenic, Mutagenic & substances that are toxic for Reproduction (CMR)**
- **Endocrine Disrupters (EDC)**
- **Neurotoxic substances**
- **Sensitisers**

In our view, the above-mentioned intrinsic hazards are all covered by the REACH criteria for SVHC identification as defined in Article 57 (paragraph a to f).

3.1.1. Carcinogens, Mutagens and Reprotoxicants (CMR)

REACH considers substances of very high concern (SVHC) as those meeting the criteria for classification as carcinogenic, mutagenic or toxic for reproduction (CMR) category 1A or 1B in accordance with CLP Regulation²¹. However, the TU List also

²¹ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. [Official Journal L 353 of 31.12.2008].

includes substances identified by IARC (The International Agency for Research on Cancer) as human carcinogens (IARC 1) and probable human carcinogens (IARC 2A). Those substances are indeed considered to meet the criteria of Article 57(f) due to the scientific evidence collected in the internationally recognized IARC reports which is strong enough to raise a level of concern equivalent to those substances classified as carcinogenic category 1A or 1B in CLP Regulation.

Taking a precautionary approach with article 57(f), the TU list also includes CMR substances category 2 according to the EU Regulation 1272/2008 as there is partial evidence (although not conclusive) of carcinogenicity, mutagenicity and toxicity for reproduction from appropriate human and animal studies.

Other EU legislations have included restriction to these substances along the same reasoning²². For example, Directive 76/768/EEC includes a provision in Article 4b that prohibits the use in cosmetic products of carcinogenic, mutagenic and substances that are toxic for reproduction (CMR) with category 1A, 1B and 2 as classified by CLP Regulation.

Moreover, CMR category 2 as well as IARC 1 and 2 carcinogens match all factors for being considered of equal level of concern to CMR (cat. 1 or 2) substances according to the specific REACH guidance²³:

- the seriousness of the effects
- the irreversible nature of the effects
- the consequences for society and the difficulty in performing concentration-based risk assessments.

²² – Safety Services Office. Carcinogens. Notes for Guidance. Leicester, UK: Safety Services Office of the University of Leicester, 2004. Available at: <http://www.le.ac.uk/safety/documents/pdfs/carcinogens-guide.pdf>. Accessed October 2009.

– SCCNFP. The Scientific Committee on Cosmetic Products and Non-Food Products Intended for Consumers opinion concerning chemical ingredients in cosmetic products classified as carcinogenic, mutagenic or toxic to reproduction according to the chemicals Directive 67/548/EEC (SCCNFP/0825/04). Scientific Committee on Cosmetic Products and Non-Food Products Intended for Consumers (SCCNFP), 2004.

²³ Guidance for the preparation of an Annex XV dossier on the identification of SVHC, available at http://guidance.echa.europa.eu/docs/guidance_document/svhc_en.pdf

As a consequence, **carcinogenic substances** included in the TU List are:

- Substances classified as category 1A, 1B and 2 in accordance with EU Regulation 1272/2008, so called CLP Regulation (categories 1, 2 and 3 in accordance with Directive 67/548/EEC) identified in Annex VI with hazard statements²⁴ H350 (may cause cancer) and H351 (suspected of causing cancer).
- Substances classified by the International Agency for Research on Cancer²⁵ (IARC) as human carcinogens (IARC 1), that are probable human carcinogens (IARC 2A) and that are possible human carcinogens (IARC 2B).

Mutagenic substances included in the TU List are:

- Substances classified as mutagenic category 1A, 1B and 2 in accordance with CLP Regulation (categories 1, 2 and 3 in accordance with Directive 67/548/EEC) identified in Annex VI with hazard statements H340 (may cause genetic defects) and H341 (suspected of causing genetic defects).

Substances that are **toxic for reproduction** included in the TU List are:

- Substances classified as toxic for reproduction category 1A, 1B or 2 in accordance with CLP Regulation (categories 1, 2 and 3 in accordance with Directive 67/548/EEC) identified in Annex VI with hazard statements H360 (may damage fertility or the unborn child), H361 (suspected of damaging fertility or the unborn child).

3.1.2. Persistent, Bioaccumulative and Toxic substances (PBT) and very Persistent and very Bioaccumulative substances (vPvB)

Under REACH, SVHC also include substances which are persistent, bioaccumulative and toxic in accordance with the criteria set out in Annex XIII of this Regulation.

²⁴ Hazard statement is a phrase assigned to a hazard class and category that describes the nature of the hazards of a substance or mixture, including, where appropriate, the degree of hazard.

²⁵ IARC. IARC Monographs on the evaluation of carcinogenic risks to humans. Lyon, France: International Agency for Research on Cancer (IARC). Available at: <http://www.iarc.fr/>. Accessed October 2009.

In March 2010, during their visit to ECHA, Commissioner Potočník and Vice-president Tajani announced the agreement reached on setting wider criteria for the identification of persistent, bioaccumulative and toxic substances, or very persistent and very bioaccumulative. The agreement foresees that all available information is to be considered and will be used in a so-called "weight of evidence approach".

Given the short time remaining until the first registration deadline, the Commissioners have also agreed transitional measures for the smooth implementation of these criteria to be stated in the revised annex XIII of REACH²⁶.

The current Annex XIII criteria cover less PBT substances than the criteria set out by the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic²⁷ which aims at eliminating the release of these substances into the marine environment by year 2020. The OSPAR Convention has been signed by the European Union.

The ECHA's guidance on identification of SVHC states:

"For substances with persistence, bioaccumulation and toxicity properties, the risks are difficult to estimate using traditional risk assessment methodologies, but they potentially do lead to effects and risks of concern from which ecosystems should be protected...

PBT/vPvB criteria are defined in a specific way, and it is possible that such additional concerns may also be associated with substances that do not precisely meet all the PBT/vPvB criteria in Annex XIII. These substances may be considered as being of equivalent concern to a PBT or a vPvB substance."

The scientific evidence behind OSPAR PBT substances list is strong enough to include these substances in the list for prioritisation as, in accordance with article 57(f), they give rise to an equivalent level of concern to the substances classified as PBT and/or vPvB by REACH.

²⁶ <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/360&format=HTML&aged=0&language=EN&guiLanguage=en>

²⁷ OSPAR List of Substances of Possible Concern. OSPAR Commission, 2006. Available at <http://www.ospar.org/>. Accessed October 2009.

Moreover, as OSPAR criteria are likely to match with the revised Annex XIII criteria, they have been taken into consideration in the Trade Union list of priority substances.

In 2007, another list of PBT substances has been published by the EU27 as part of the interim-strategy between the “old” European Chemicals legislation and REACH²⁸. 127 Existing Chemicals and 101 New Substances respectively were evaluated for their PBT/vPvB properties. For the moment, nevertheless, it only comprises 27 substances, all of them already included in the OSPAR list.

Therefore, PBT/vPvB substances included in the TU List are:

- PBT substances listed in the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic.
- PBT/vPvB substances listed by the Technical Committee on New and Existing Substances (TC NES).

3.1.3. Substances of equivalent level of concern

Endocrine disruptors (EDC)

Ongoing research on endocrine disruption continuously provides new lists of substances with these properties. Several publications provide updated lists of endocrine disruptors taking into account scientific publications on the issue. Around 2,250 substances have been identified worldwide as having these properties²⁹.

The short term action plan of the EU Strategy on endocrine disruptors foresees the setting up of a priority list of endocrine disrupting substances. Until now, the Commission has published two communications and two staff working documents³⁰ on the issue with tables of priority substances that are known to be endocrine

disruptors and substances with insufficient data. These lists include around 400 substances.

Endocrine disruptors are specifically covered by REACH Art 57 (f). Also, according to the ECHA’s guidance on SVHC identification endocrine disruption can be both serious and irreversible and so endocrine disruptive effects should be considered as being of equivalent concern. Furthermore, the guidance refers to the list of endocrine disruptors published by the European Commission.

Therefore, EDC match all factors for being considered of equal level of concern:

- Substantial evidence of long-term and delayed adverse effects.
- There may be effects on several subsequent generations through epigenetic effects, and this would be even more worrisome with respect to irreversibility than effects on the next generation due to in-utero or in egg exposure, therefore EDC have serious consequences for society.
- Absence of linear effects due to the low dose effects
- Additive effects with other EDCs add to the likelihood of an unacceptable risk for the population.
- Synthetic chemicals that may disrupt the endocrine system are widely dispersed in the environment. Thus, humans are exposed to at least some suspected endocrine disruptors, possibly at significant levels.

EDC included in the TU List are:

- Substances included in the priority list developed within the EU-Strategy for Endocrine Disruptors classified as category 1 (evidence of endocrine disrupting activity in at least one species using intact animals) and category 2 (at least some in vitro evidence of biological activity related to endocrine disruption).



²⁸ Ex-ECB. Status Report – TC NES sub-group on PBT/vPvB substances and POPs. Report to the 16th Joint Meeting of the Competent Authorities for the implementation of Council Directive 67/548/EEC (Dangerous Substances) and Council Regulation (EEC) 793/93 (Existing Substances) Doc: JM/19/2007. Ispra, Italy: Ex-European Chemicals Bureau European Commission, 2007.

²⁹ ISTAS. Riscotox database. Available at: http://www.istas.net/riscotox/dn_riscotox_dis.asp

³⁰ European Commission. Community Strategy for Endocrine Disruptors - a range of substances suspected of interfering with the hormone systems of humans and wildlife. COM (1999)706. COM (2001)262 SEC(2004)1372, and SEC(2007)1635, Brussels: European Commission, 1999-2007.

Neurotoxicants and sensitisers

According to the guidance on identification of SVHC:

“The concerns for substances which exhibit carcinogenicity, mutagenicity and reproductive toxicity arise from a number of factors – the seriousness of the effects, the often irreversible nature of the effects, the consequences for society and the difficulty in performing concentration-based risk assessments - should be taken into account when considering whether a substance shows an equivalent level of concern to CMR (cat 1 or 2) substances.

Other effects that are serious could be considered in relation to an equivalent level of concern to CMR, especially if the effects may also be irreversible. Examples of other effects that can be considered to be serious and irreversible in humans are:

- Substance-related deaths.
- Major permanent functional changes in the central or peripheral nervous system, including sight, hearing and the sense of smell.
- Severe organ damage or major permanent functional changes in other organ systems (for example the lungs).
- Consistent changes in clinical biochemistry, haematology or urinalysis parameters which indicate severe and permanent organ dysfunction”

Neurotoxicant substances which cause major permanent functional changes in the central or peripheral nervous system match these factors and are specifically considered in the guidance on identification of SVHC.

Sensitisers also match these factors, taking in account that they have no threshold level of exposure, have irreversible damage properties and its use implies serious consequences for society³¹.

REACH Art. 57 does not explicitly include neurotoxic substances or sensitisers, but the regulation does mention sensitisers as substances of high concern in several other sections; such as recital (115), Article 40(1), Article 115(1), Annex I and Annex XV. Due

³¹ Pickvance S. et al. The impact of REACH on occupational health with a focus on skin and respiratory diseases. University of Sheffield, 2005. See the ETUI website: <http://hesa.etui-rehs.org/uk/publications/pub35.htm>

to their high impact on occupational health³² and frequent use in industry³³, we consider that these substances actually raise a high level of concern and should be taken into consideration for drawing up the Trade Union List.

There is no available official list of substances that cause major permanent functional changes in the central or peripheral nervous system. CLP regulation only includes narcotic effects; therefore it does not have a classification for neurotoxicity itself or specific hazardous statements. For that reason, literature review was used to identify occupational neurotoxicants and add them to the list.

Neurotoxicants included in the **TU List** are:

- Provisional list for occupational neurotoxicants included in the review published by Vela et al.³⁴

Sensitisers included in the **TU List** are:

- Substances classified as skin or respiratory sensitisers by CLP Regulation, identified in Annex VI with hazard statements H334 (may cause allergy or asthma symptoms or breathing difficulties if inhaled) and H317 (may cause an allergic skin reaction).

³² – Commission Recommendation of 19 September 2003 concerning the European schedule of occupational diseases (notified under document number C(2003) 3297) (Text with EEA relevance) (2003/670/EC) ANNEX I

– ILO. Encyclopaedia of Occupational Health and Safety 4th Edition: Chapter 7 - Nervous System, Chapter 12 - Skin Diseases, Chapter 10 - Respiratory System, Chapter 104 - Guide to Chemicals, Chapter 13 - Systemic Conditions, etc. . Available at: <http://www.ilocis.org/en/default.html>.

– CHARGE TO THE NORA CROSS-SECTOR COUNCIL. Version of March 8, 2007. Appendix 1: Generic and cross-sector issues for consideration by NORA Sector Councils

– “Exposure-response relationships of occupational inhalative allergens”. Baur X, Chen Z, Liebers V. Research Institute for Occupational Medicine (BGFA), Institute at the Ruhr-Universität Bochum, Germany. Clin Exp Allergy. 1998 May;28(5):537-44

– “Epidemiology and etiologic agents of occupational asthma” Ameille J, Larbanois A, Descatha A, Vandenplas O. Rev Mal Respir. 2006 Dec; 23(6):726-40.

– “The state of occupational safety and health in the European Union”. European agency for safety and health at work.

³³ HPV, high-production volume; CERCLA, Comprehensive Environmental Response, Compensation, and Liability Act; TRI, Toxic Release Inventory

³⁴ Vela M, Laborda R, García AM. Neurotóxicos en el ambiente laboral: criterios de clasificación y listado provisional. Arch. Prev. Riesgos Labor. 2003; 61:17-25.

Substances included in the "List of REACH Allergens"³⁵

The data source used to document the Trade Union list is the RISCTOX database³⁶ that contains (eco) toxicological information for more than 100,000 substances and includes substances that have been identified as carcinogenic, mutagenic, toxic for reproduction, endocrine disrupters, neurotoxicants, etc. by European legislation and different national and international organizations.



³⁵ AVE e.V./KEAC Working Group (Friedhelm Diel, Michael Fischer, John Kamsteeg, Hans Schubert, Klaus-Michael Weber). UMWELT & GESUNDHEIT 2/2006.

³⁶ ISTAS. RISCTOX Database. Madrid: Instituto Sindical de Trabajo, Ambiente y Salud (ISTAS). Available at: <http://www.istas.net/risctox/>.

3.2. Prioritisation criteria and starting pool of substances

In the Trade Union's view the most urgent SVHC to be included in the Candidate List are:

- chemicals to which workers are widely exposed to
- chemicals with known adverse health effects on exposed workers
- chemicals toxic to the environment, persistent and bioaccumulative

On the other hand, REACH article 58(3) specifies that the substances from the Candidate List that shall normally be given priority to enter the Authorisation List (Annex XIV) are:

- 1) PBT/very Persistent and very Bioaccumulative (vPvB), or
- 2) substances with wide dispersive use, or
- 3) substances produced in high volumes

Based on these criteria, the following substances have been chosen as a starting point for the Trade Union Priority List:

- the 2,782 High Production Volume Chemicals (HPVC) included in the HPV Chemicals Information System which is part of ESIS (European chemical Substances Information System), from ECB³⁷ and
- the 1,818 substances with sufficient identification data for which a SIEF (Substance Information Exchange Forum)³⁸ has been formed by 19/03/2010 and which are expected to be registered by December 2010 according to the information provided to ECHA by the Lead Registrants. These substances are, therefore, produced or imported into the EU in volumes higher than 1,000 tonnes per year, CMR substances or substances toxic to aquatic organisms (H 400/413³⁹) produced or imported in volumes higher than 1t/y and 100 t/y respectively.

³⁷ Ex-ECB. European Chemical Substances Information System (ESIS). Ex-European Chemicals Bureau (Ex-ECB) of the European Commission. Available at: <http://ecb.jrc.ec.europa.eu/esis/> Accessed October 2009.

³⁸ Available at ECHA database: http://echa.europa.eu/home_en.asp. Accessed March 2010.

³⁹ R50/53 according to former 67/548/EEC Directive.

After removing duplicates, they amount at 4,290 different substances.

Due to the lack of real occupational and environmental exposure data, this HPV-SIEF chemical starting point is used as an indicator of wide exposure, assuming that substances with high production volume will be present in higher amounts at workplaces and will end up in different environmental compartments in higher quantities. In addition, since several companies throughout Europe are preparing a joint registration dossier within each SIEF, this could be used as a proxy for widespread use.

Nevertheless, we are aware that many substances with very dangerous properties for workers' health and the environment may fall out of this priority list.

Reliable information on high production volume chemicals will be available thanks to the Registration procedure of REACH Regulation by 30 November 2010.



3.3. Definition of scores for each criterion

The European Union Risk Ranking Method (EURAM)⁴⁰ was followed to score health effects, in a scale ranking from 7 (lowest score) to 10 (highest score).

EURAM scores were applied for known CMR (10 points), for suspected CMR (9 points) and for sensitisers by inhalation (7 points). Health and environmental effects not included in EURAM have been given a score in accordance with the level of concern that REACH confers on them. For instance, known endocrine disrupters and PBT/vPvBs are given a high score (9 points) as they are clearly established in REACH as substances of very high concern, whereas suspected endocrine disrupters and neurotoxicants are given a lower but still precautionary score (7 points), as shown in Table 1.

Table 1. Health and environmental effect scores used by the European Union Risk Ranking Method (EURAM) and the Trade Union Priority List

Substances	EURAM score	TU List score
EU Carcinogens cat. 1A or 1B	10	10
IARC Carcinogens 1 or 2A group		10
EU Mutagens cat.1A or 1B	10	10
EU Reprotoxics cat.1A or 1B	10	10
EU known Endocrine Disrupters		9
PBT		9
EU Carcinogens cat.2	9	9
IARC Carcinogens 2B group		9
EU Mutagens cat. 2	9	9
EU Reprotoxics cat.2	9	9
Sensitisers by skin contact	6	7
Sensitisers by inhalation	7	7
EU suspected Endocrine Disrupters		7

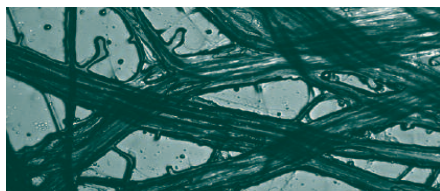
⁴⁰ Hansen BG, van Haelst AG, van Leeuwen K & van der Zandt P. Priority Setting for Existing Chemicals: The European Union Risk Ranking Method. Environ. Toxicol. Chem. 1999; 18:72–779.

Confirmed PBT/vPvBs and EDCs were given the same rank (9) than possible CMRs (CMR 2) in the TU List, although PBTs, CMRs and EDCs are equally identified as SVHC under REACH. This decision was taken due to the high impact of cancers and reproductive disorders linked to CMRs exposure at the workplace.

Scores were applied by effect. Hence one substance that is a carcinogen according to CLP Regulation and also according to IARC, will be given the score associated with the most conservative (and maximum) designation. In those cases, a 0 has been included to the IARC scoring box.

The same rule will be applied for substances that are toxic for reproduction which may both impair fertility and cause harm to the foetus.

The scores of all the effects were added. Substances with several health effects score higher as a total of all the scores added together.



3.4. Development of the list

3.4.1. Ordering by score

The High Production Volume Chemicals and SIEF lists (step 2) were combined with the selected lists of substances with hazardous properties (step 1) and ordered by score given (step 3).

3.4.2. Exclusion of exemptions

The following substances were removed from the list:

1. **Substances already banned by other means:** EU Regulation 850/2004 on POPs⁴¹. Annex A substances: terphenyl
2. **Residues, identified intermediates,** slags, ashes, drosses, slimes, sludges, mattes, dusts, speisses, slugs, ores, fumes, wastes, leaches, by-products, reaction products, dusts, crusts, calcines, limestones, slacks, flue gases, foot oils, skims and calcines.
3. **Pesticides and biocides:** Uses as pesticides and biocides are exempted from REACH authorisation. However, some of the substances used as pesticides or biocides may have other uses, consequently covered by REACH. Major uses of substances have been checked in the Hazardous Substances Data Bank (HSDB)⁴² and the SPIN⁴³ database from the Nordic Countries. Substances that only have pesticide or biocide use have been removed from the list.
4. **Complex hydrocarbon distillates:** Many hydrocarbon distillates occur only in fuel streams, coming from refined or unrefined petroleum and might be exempted from REACH authorisation. However, other petroleum derivatives as naphthas have not

⁴¹ Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EC. [Official Journal L 158 of 30.04.2004]

⁴² <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?>

⁴³ Substances in Preparations in Nordic Countries (SPIN) <http://195.215.251.229/DotNetNuke/default.aspx>

been removed as they are widely used in the workplace. Only hydrocarbon streams⁴⁴, tail gases, residues, gas oils, clarified oils, petrolatums, kerosines, natural gases, fuels and gasolines were taken out of the list.

5. Unknown uses: Major uses of all substances have been checked in the Risctox database, Hazardous Substances Data Bank (HSDB)⁴⁵ and the SPIN⁴⁶ database. Substances that have not known use have been removed from the list.

3.4.3. Grouping of substances

Isomers or substances with very high structural similarities have been grouped together in order to reduce the number of entries in the TU list (i.e. "xylene/m-xylene/p-xylene/o-xylene" or "potassium dichromates") As a consequence, entries can be single substances but also group of substances covering a whole range of related substances. In those cases, the most hazardous substance was taken as a reference for the whole group and marked with * in the list.

3.4.4. Inclusion of Refractory Ceramic Fibres (RCF)

Although not included in the HPVC list from ECB, RCF were included in the first version of the TU List (March 2009) for 3 main reasons. First, 25,000 tonnes of these materials were used in Europe in 2005. Second, about 25,000 workers are exposed annually in Europe to these types of high temperature wools⁴⁷. Third, RCF have been also proposed by the Commission as candidate substances for which an Occupational Exposure Limit Value might be defined at EU level, signalling that they are recognized

to be highly relevant for workers health⁴⁸. It is worth noting that, in January 2010, aluminosilicate and zirconia aluminosilicate Refractory Ceramic Fibres have been included in the REACH Candidate List⁴⁹.

3.4.5. Additional information provided in the TU list

Uses

In order to facilitate the identification of uses not exempted from Authorisation and also, to have an indication of possible wide spread use of substances, the major uses identified in the Risctox, HSDB and SPIN databases of listed substances have been included in the TU List.

Occupational diseases

Inclusion of substances linked to occupational diseases in the Candidate List and in the Authorisation List, is crucial for the improvement of workers' health and environment. For this reason substances listed in Annex I to the Commission Recommendation (19/09/2003) concerning the European schedule of occupational diseases have been highlighted in the TU List. These substances are involved in scientifically recognised occupational diseases liable for compensation in most EU countries. Substances included in the "additional list of diseases suspected of being occupational in origin which should be subject to notification and which may be considered at a later stage for inclusion in Annex I to the European schedule" have also been highlighted⁵⁰. Nevertheless no scoring was applied to the substances identified as causative agents for occupational diseases, considering that this approach is not consistent with scoring the different health and environmental effects.

⁴⁴ http://www.ec.gc.ca/substances/ESE/eng/CMP/petroleum_guidance2.cfm,
<http://www.chemicalsubstanceschimiques.gc.ca/plan/approach-proche/petrole-eng.php>

⁴⁵ <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?>

⁴⁶ Substances in Preparations in Nordic Countries (SPIN) <http://195.215.251.229/DotNetNuke/default.aspx>

⁴⁷ European Association representing the High Temperature Insulation Wool Industry (ECFIA) Website. Available at: <http://www.ecfia.eu/>. Accessed October 2009.

⁴⁸ European Commission. Specifications - Open Invitation to tender No VT/2008/063 concerning a contract on the analysis at EU-level of health, socioeconomic and environmental aspects in connection with possible amendments to Directive 2004/37/EC of the European Parliament and of the Council of 29 April 2004 on the protection of workers from the risks related to exposure to carcinogens or mutagens at work.

⁴⁹ ECHA website: http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

⁵⁰ Annexes I & II from Commission Recommendation (19/09/2003) concerning the European schedule of occupational diseases. C(2003) 3297 final.

Candidate list substances

Substances on the TU list which are already included in the official Candidate list have also been flagged. There are currently 24 substances proposed by TU among the 30 substances included in the Candidate list. These substances may eventually be subject to authorisation.

Substances registered in the Registry of Intentions⁵¹ (RoI) or with an Annex XV dossier submitted⁵² for SVHC identification have also been flagged. At the end of March 2010, 32 out of 39 submitted dossiers and all substances in the RoI corresponded to substances included in the TU List.

Substances with harmonised classification at EU level

According to REACH article 59, the European Chemicals Agency (on behalf of the European Commission) or Member State Competent Authorities have to identify substances meeting the criteria referred to in Article 57 and establish a candidate list for eventual inclusion in Annex XIV.

The Agency or any individual Member State may prepare a dossier (Annex XV) suggesting substances that scientifically speaking would belong to the above groups of substances of very high concern.

This dossier "may be limited, if appropriate, to a reference to an entry in Annex I of Directive 67/548/EEC⁵³", as these substances have been already assessed.

This means, according to the article 57 criteria, that at least, all the CMR substances category 1 or 2 included in the list of hazardous substances with a harmonised classification at EU level don't need the submission of a whole annex XV dossier.

It would be enough if a Member State or the Commission refers to the respective entry in Annex I.

In order to facilitate the identification of these substances in the TU list, all entries also listed in Annex VI of the CLP Regulation (former Annex I of Directive 67/548/EEC) have been flagged with the corresponding reference (see "Annex VI CLP" entry in the TU list).

⁵¹ http://echa.europa.eu/chem_data/reg_int_tables/reg_int_curr_int_en.asp#current_svhc

⁵² http://echa.europa.eu/chem_data/reg_int_tables/reg_int_subm_doss_en.asp#subm_svhc

⁵³ Former Council Directive 67/548/EEC of 27 June 1967 on classification, packaging and labelling of dangerous substances [Official Journal 196, 16/08/1967 P. 0001 - 0098]

4. Results

The Trade Union Priority List includes **568** HPVC/SIEF substances with at least one of the selected dangerous properties ordered by score.

In order to reduce the matrix, substances with very high structural similarities, have been grouped under the same entry. As a result, entries can be substances but also group entries covering a whole range of substances.

Therefore, the resulting Trade Union Priority List⁵⁴ has **334** entries. 209 out of these entries are substances or groups of substances related with recognised occupational diseases and 63 entries are from substances that cause diseases suspected of being occupational in origin.

This ranking is the result of applying the corresponding score to each substance. Dinitrotoluene, has the maximum score (44 points), therefore, among the high production volume substances, it is considered the most dangerous for health and environment, because it is:

- carcinogen category 1B, according to Regulation (EC) No 1272/2008 and also according to IARC (category 2B); 10 points
- mutagen category 2 according to (EC) 1272/2008; 9 points
- toxic for reproduction category 2 according to (EC) 1272/2008; 9 points
- Persistent, Bioaccumulative and Toxic according to OSPAR; 9 points
- neurotoxicant; 7 points

Out of the 334 entries included in the TU list, 276 are also listed in Annex VI of (EC) 1272/2008 Regulation (including 70 entries that are classified as CMR category 1).

⁵⁴ See Annex I: Trade Union Priority List.

5. Discussion

5.1. Lack of information

From the trade unions point of view, the existing lack of available information on toxicity, production volumes, uses and exposures of chemicals should not be used as an excuse for delaying the inclusion of substances in the Candidate List. We believe that the precautionary principle should be applied and that in many cases available data are sufficient to take action at Community level.

5.1.1. Toxicity information

The most reliable information that could be used to set up the TU priority list, are information on the intrinsic hazard properties of substances. These data are often incomplete for many endpoints such as disruption of the immune system, acute toxicity, depletion of ozone layer, and ecotoxicity, as examples.

Only substances included in official EU and international publications or regulations have been taken into account and these documents are not regularly updated with available knowledge on toxicity.

Therefore, the TU list may not include substances of high toxicity or ecotoxicity that deserve attention from authorities and perhaps should also be eliminated from the market through the REACH authorisation process.

On the other hand, SVHC with complete data (i.e. substances for which complete risk assessment reports have been published under the previous legislation⁵⁵) might be over-represented at the top of the TU list.

⁵⁵ Ex-ECB. Summary of Existing Chemicals Risk Assessments. Ex European Chemicals Bureau (Ex-ECB), European Commission. Available at: <http://ecb.jrc.ec.europa.eu/documentation/>. Accessed October 2009.

Moreover, when grouping chemicals, several isomers had different official extent (or lack) of available test data –marked with * in the List–.

In those cases, the most hazardous substance was taken as a reference for the whole group.

For instance para-cresol has been assessed by the EU working group³⁰, as a substance with potential evidence of endocrine disrupter effects.

This is not the case for its other isomers (ortho and meta cresols). p-cresol properties were taken as reference for the whole group “cresol & its isomers”.

Errors leading to an underestimation of toxicity of certain substances might be introduced into the prioritisation scheme due to these data gaps.

5.1.2. Production Volume information

The high production volume data used for this project was obtained from the Ex-European Chemicals Bureau and ECHA's website.

Ex-ECB's HPVC database was published in 1999. This high production chemicals database was established by the Council Regulation 793/93⁵⁶, for substances produced in the European market between 1971 and 1981. Thus this information is not properly updated and it is clear that many substances currently produced in high production volumes in Europe are not considered in the TU List. For instance, triethyl arsenate and lead chromate have been identified as a SVHC in the REACH Candidate list published by ECHA, but they are not in the TU List because both substances were marketed after 1981 and therefore, not included in the Ex-ECB HPVC database nor in the SIEF list.

SIEFs consist of companies that pre-registered substances with the same chemical identity and who intend to register them under REACH. Data on SIEF formation are regularly updated on ECHA's website. For each SIEF, on top of the substance name

⁵⁶ Council Regulation (EEC) No 793/93 of 23 March 1993 on the evaluation and control of the risks of existing substances. [Official Journal L 84 of 05.04.1993]

and its EC number, the earliest expected registration deadline is provided. When the deadline indicated is December 2010, it can be deducted that the substance is produced in more than 1,000 tonnes per year or in quantities greater than 100 tonnes per year for substances toxic to aquatic organisms or, in quantities greater than 1 tonne per year for CMR substances.

Substances covered by a SIEF when we last visited ECHA's website (19 March 2010) and expected to be registered by December 2010 have been considered for inclusion in the TU list.

As the number of substances covered by a SIEF is in constant evolution, some of the substances that will be registered by the 2010 deadline are unavoidably excluded from our work.

5.1.3. Information on occupational exposure

From a Trade Union point of view, it is important to choose substances widely used in the workplace, and, or, in different sectors. To find out which substances are widely used, we explored occupational exposure databases. However, it is complicated to find updated occupational exposure databases that cover all EU countries, and most of the existing databases are private⁵⁷.

An additional source to obtain good indication of workers' exposure to hazardous chemicals is the Commission Recommendation concerning the European schedule of occupational diseases, a list of occupational diseases and their identified or suspected causative agents.

⁵⁷ FIOH. CAREX- International Information System on Occupational Exposure to Carcinogens. Finnish Institute of Occupational health (FIOH). Available at: <http://www.ttl.fi/Internet/English/Organization/Collaboration/Carex/>. Accessed October 2009.

European Agency for Safety and Health at Work. OSH Monitoring Systems. Available at: http://osha.europa.eu/en/riskobservatory/osm/system/index_html/#exp. Accessed October 2009.

SPIN database on substances and preparations on the Nordic market (Norway, Sweden, Denmark and Finland). Website: <http://195.215.251.229/DotNetNuke/default.aspx>, 2006

German Gestis database on hazardous substances (information system of the Berufsgenossenschaften <http://www.dguv.de/bgia/de/gestis/stoffdb/index.jsp#>)

Inclusion of substances linked to occupational diseases in REACH candidate and authorisation lists is crucial for the improvement of workers health. The European schedule of occupational diseases was used as a baseline since the listed substances are involved in scientifically recognised occupational diseases or diseases suspected of being occupational in origin.

On the other hand, the procedure to identify new causative agents for occupational diseases is long and complicated. Therefore, some widely used substances that are related with occupational diseases might not be included in our project.

No specific scoring was applied to the substances capable of producing an occupational disease, since this approach would not have been consistent with the other criteria based on human and environmental endpoints.

However, we suggest that occupational diseases linked to SVHC should be taken into account both for their inclusion in the Candidate List and their prioritisation in the Authorisation List.

5.1.4. Wide dispersive use information

Since there is no official available information on substances uses in Europe, it becomes difficult to assess the dispersive use of substances.

A complete review on the uses and exposure scenarios of the chemical agents is needed.

This information, required under REACH Registration procedure is not publicly accessible yet.

However, the fact that occupational diseases caused by SVHC are recognised all over Europe can be seen as the visible consequence of wide-dispersive uses of these hazardous chemicals. It indeed clearly means that they are used at many places with significant releases and exposure to the workers. This is an additional reason to consider occupational diseases for SVHC prioritisation in Annex XIV.

5.1.5. Updated information

It is necessary to update the priority list when additional data is available to create an "active" list of the most concerning substances.

Therefore, new substances of very high concern should be gradually included in the TU List. In this first update of the Trade Union List, we have used publicly available data on SIEFs to add 29 entries to our list covering 84 new substances.



5.2. SIN List & Member States List

The **SIN* List** (*Substitute It Now!) was first published in September 2008 by a group of leading environmental NGOs⁵⁸ coordinated by ChemSec. The SIN List was updated in October 2009 (SIN List 1.1) and it contains 356 entries of chemicals (461 single substances) that are identified as Substances of Very High Concern based on the REACH criteria.

The aim of the SIN List is to speed up the REACH legislative process, since it is based on a straightforward concept: substitute hazardous chemicals with safer alternatives.

The TU List is to a large extent based on the REACH methodology just as the SIN List is. The main difference is that the TU List also takes into account the specific issues concerning workers' health at the workplace, applies a precautionary approach towards chemicals 'suspected' of certain harmful effects, and includes a proposal for ranking SVHC. Therefore the TU list comprises a wider set of chemicals with potential to cause health issues to workers, which partially overlaps with the SIN List, using the official REACH criteria. Both lists however consist of substances that are indeed of high concern for human health and the environment, and should consequently be replaced by safer alternatives or phased out as soon as possible.

The SIN List 1.1 has 130 substances in common with the TU List. Thus, these 130 substances are jointly of very high concern for workers, consumers and environment and should be urgently included in the REACH candidate list. It is also worth noting that the sum of substances identified as SVHC in the SIN List and in the TU List amounts at 899 (461 + 568 - 130).

⁵⁸ The Project is guided by an NGO advisory committee including the European Environmental Bureau (EEB), WWF European Policy Office, Greenpeace European Unit, Friends of the Earth Europe (FoEE), Instituto Sindical de Trabajo, Ambiente y Salud (ISTAS), Women in Europe for a Common Future (WECF), the Health and Environment Alliance (HEAL), the European Consumers' Organisation (BEUC) and the Center for International Environmental Law (CIEL).

The **Member States List** (MS List) was developed by an informal expert group of six EU Member States in the period from January to May 2009. The objective was to screen SVHC on the basis of substances already identified as CMRs and/or PBT/vPvBs for building up the Candidate list.

MS List comprises 478 substances, which have been ranked by using simple indicators for exposure, uses and production volumes.

The result can be used by Member States as a starting point for the preparation of Annex XV dossiers. The informal expert group proposed for the coming 1-2 years to start preparing new Annex XV dossiers by selecting substances with the highest scores in the MS List (99 substances for scores 4, 5 or 6).

For the development of their list, Member States have considered the methodologies used in both the trade unions' and the European environmental NGOs' lists (TU List and SIN List). In fact, 131 substances (that correspond to 78 entries) included in the MS List match up with the trade union's proposals. These substances are marked in the TU List (see 'Other Lists' column).

However, since the project does not aim to identify potential new SVHCs, the work of Member States focuses on substances already known to fulfil the SVHC criteria. Therefore, it does not consider substances of equivalent concern to health and the environment, such as endocrine disruptors, neurotoxicants or sensitisers proposed by trade unions.



5.3. Use of the Candidate List

REACH foresees two processes by which the placing on the market and use of substances may be limited in order to control risks arising from them; the authorization and the restriction processes. Both can be triggered by a Member State or the Commission and they both start with the preparation of an Annex XV dossier.

Since the Candidate List's aim is to identify SVHC, it could be used as a portal to either REACH authorisation or restriction procedures.

5.4. Further prioritisation parameters

REACH article 58(3) specifies that the substances that shall normally be given priority to enter the Authorisation List (Annex XIV) are those with PBT or vPvB properties, wide dispersive use and/or substances produced in high volumes.

This statement leaves open the decision of including additional criteria for prioritisation of SVHC. Therefore, in order to minimise the incidence of chemical-related workers diseases and the inherent costs for the community, workers and industry, ETUC proposes that available and widely accepted data on recognised occupational diseases linked to SVHC should be taken into consideration in the prioritisation criteria.

ETUC's proposal for considering occupational diseases as a new parameter for SVHC prioritisation into the Annex XIV was presented to the ECHA's Member State Committee in May 2008. The proposal was well received by the members of the Committee who agreed to further investigate that option.

5.5. Future equivalent concerns

REACH article 57(f) leaves open the possibility for Authorities of identifying SVHC with other properties than those explicitly listed in Article 57 (a to e). According to the ECHA's guidance on identification of SVHC:

"It is important that as yet unidentified substance properties can be captured under the consideration of equivalent concern, where there is scientific evidence (relating to probable serious effects) that these properties give rise to an equivalent level of concern to those of CMR cat 1 and 2⁵⁹, PBT and vPvB substances. It might be that other as yet unidentified aspects of a chemical's behaviour in the environment or its impacts on organisms will lead to a change in the current paradigm for chemical hazard and risk assessment. Authorities are encouraged to... consider such aspects and properties in the future".

We are convinced that for all CMRs cat. 2 according to the EU Regulation 1272/2008 (cat. 3 according to Directive 67/548/EEC), OSPAR PBTs, IARC 1 and 2 carcinogens, sensitisers, neurotoxicants and endocrine disrupter substances, normal risk assessment methodology is not adequate, and there is sufficient scientific evidence to conclude that serious effects are probable and that exposure of humans to the chemical is likely to occur under normal conditions of use. We are therefore of the opinion that these substances should be considered as being of equivalent concern.



⁵⁹ According to Directive 67/548/EEC classification criteria.

6. Conclusions

The aim of the Trade Union Priority List is to feed into the debate on the choice of substances for inclusion in the Candidate List.

Workers are exposed to substances of very high concern (SVHC) in their workplaces and for longer periods of time than the general population. Therefore, from a Trade Union point of view these SVHC must be targeted for priority action.

In the Trade Union's view the most urgent SVHC are those to which workers are most exposed and are known to cause recognised occupational diseases.

At the end of March 2010, 24 out of the 30 substances included in the Candidate List are also proposed by ETUC in its TU List; 32 substances proposed by ETUC are also in common with the 39 Annex XV dossiers submitted so far, as well as all substances (6 out of 6) included in the Registry of Intention. This shows that the TU List is a valuable tool for identifying SVHC.

At the time the TU List was developed it had 130 substances in common with the 461 substances in the SIN List 1.1 and 131 substances in common with the 478 substances in the MS List, the other lists also developed to influence the REACH authorisation process. There are 100 substances that are included in all three lists (TU, MS & SIN lists), therefore, 100 substances are agreed by Trade Unions, Member States and NGOs to meet the SVHC criteria.

The list made by Member States is also very significant, as it is an additional confirmation that there are a large number of highly dangerous substances circulating in the European market and, predictably, these substances will be proposed in future years for inclusion in the Candidate list.

European trade unions strongly support the initiative of the 6 European countries and consider that all these substances must go through the authorisation process and consequently, be replaced by less hazardous alternatives as soon as possible.

Taking into account the three priority lists developed by different actors (Competent Authorities, NGOs and Trade Unions) they total 978 different substances that all have the common denominator of meeting the criteria to be considered as SVHC. However, there is still a long way until all these SVHC are included in the Candidate list. To ensure environmental and health defence sought by REACH, it is necessary to "accelerate" the process of phasing-out the most dangerous substances on the market. If there are almost 1,000 substances of very high concern already recognized, we can not wait 100 years for the slow mechanism of REACH to meet its objectives of protection.

Including the TU List into the REACH Candidate List will improve information on the risks of these substances and how to control them throughout the supply chain, as suppliers of these substances or mixtures have the obligation to provide safety data sheets and distributors of articles containing these substances have the obligation to inform consumers of the presence of any authorised chemicals in the products they buy and how to use them safely. Substances that already have a harmonised classification would not need a complete Annex XV authorisation dossier. Therefore, including them in the Candidate List would have an important impact on the protection of human health and the environment and would not excessively impact ECHA's limited resources.

Furthermore, 74,000 workers die each year in the EU-27 from exposure to hazardous chemicals at work⁶⁰. Including the TU list into both the REACH candidate and authorisation lists would promote the development of safer alternatives and reduce the incidence of chemical-related occupational diseases and the attendant costs for communities, workers and industry itself.

In this work, we present a precautionary but scientifically aligned process for identifying, scoring and ranking Substances of Very High Concern including categories of substances not currently considered in other approaches to the REACH regulation. This proposed methodology is advocated by Trade Unions to coherently prioritise SVHC in order to implement and enforce REACH in a way that will more effectively protect the health of the European working and general population.

⁶⁰ AEU-OSHA. Report - Expert forecast on emerging chemical risks related to occupational safety and health. European Agency for Safety and Health at Work. Bilbao, 2009. Available at: http://osha.europa.eu/en/publications/reports/TE3008390ENC_chemical_risks/view. Accessed February 2010.

Annex I: Trade Union Priority List

- Substances or group of substances related with recognised occupational diseases.
- Substances or group of substances related with diseases suspected of being occupational in origin which should be subject to notification and which may be considered at a later stage for inclusion in Annex I to the European schedule.
- No attributed contact/occupational diseases.

Groups marked with * in the list: several substances of this group might have different extent (or lack) of available test data. In those cases, most hazardous substance was taken as a reference for the whole group.

Uses: Some uses are grouped into categories. This is the case for pesticides that include all types of pesticides and biocides, reagent includes all laboratory chemicals, paint is a group of all kinds of paints, laquers, coatings and varnishes, colouring agent is related with pigments and dyes, and inks, pharma refers to pharmaceutical & medication agents, absorbent is related with absorbents and adsorbents, food agents are all food/feedstuff flavourings and nutrients, antioxidants are also antiozonant agents, antiadhesive agent is also an anti-set-off agent, cement/concrete/mortar are identified as cement.

Annex VI CLP: entry in Annex VI of 1272/2008 Regulation

C1: Carcinogen Category 1A or 1B according to 1272/2008 Regulation classification criteria

C2: Carcinogen Category 2 according to 1272/2008 Regulation classification criteria

CAS: Registry number from Chemical Abstracts Service

ED1: Known to be endocrine disrupters according with Community Strategy for Endocrine Disrupters

ED2: Suspected to be endocrine disrupter according with Community Strategy for Endocrine Disrupters

EC No: Ex-European Inventory of Existing and Notified Chemical Substances (EINECS & ELINCS Number)

IARC 1, 2A: Human carcinogen and probable human carcinogen according to IARC criteria

IARC 2B: Possible human carcinogen according to IARC criteria

M1: Mutagen Category 1A or 1B according to 1272/2008 Regulation classification criteria

M2: Mutagen category 2 according to 1272/2008 Regulation classification criteria

MS List: Substance included in the 'Member States' List

n: neurotoxic

PBT: Persistent, Bioaccumulative and Toxic

R1: Reprotoxic Category 1A or 1B according to 1272/2008 Regulation classification criteria

R2: Reprotoxic category 2 according to 1272/2008 Regulation classification criteria

s: sensitizer

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
1. Dinitrotoluene *	609-007-00-9	204-450-0 / 246-836-1	121-14-2 / 25321-14-6	10						0	9	9	9		7		44	Candidate list/ MS List	Gelatinizing & waterproofing agent in explosives, modifier for smokeless powder, plasticizer, dye, intermediate	Nitrated derivatives of aromatic hydrocarbons
2. chloroalkanes *	602-001-00-7 / 602-004-00-3 / 602-006-00-4 / 602-008-00-5 / 602-009-00-0 / 602-012-00-7 / 602-014-00-8 / 602-013-00-2 / 602-015-00-3 / 602-020-00-0 / 602-062-00-X / 602-095-00-X / 602-080-00-8	200-817-4 / 200-838-9 / 200-663-8 / 200-262-8 / 200-830-5 / 203-458-1 / 201-166-9 / 200-756-3 / 201-197-8 / 201-152-2 / 202-486-1 / 287-477-0 / 287-476-5	74-87-3 / 75-09-2 / 67-66-3 / 56-23-5 / 75-00-3 / 107-06-2 / 79-00-5 / 71-55-6 / 79-34-5 / 78-87-5 / 96-18-4 / 85535-85-9 / 85535-84-8	10	0		10		0	0			9	7	7		43	Candidate list/ MS List	cleaner, degreaser, solvent, paints, stripper, adhesive, repellent, pesticide, lubricant, cooler, insulation agent, additive, glue, flame retardant, plasticizer, sealer, binder	Halogenated derivatives of thealiphatic or alicyclic hydrocarbons
3. acrylamide	616-003-00-0	201-173-7	79-06-1	10	0	10						9			7	7	43	Candidate list/ MS List	intermediate, grouting agent, sewage and wastewater treatment agent, papermaking and pulp aid, mineral processing agent, crude oil production, cosmetic additive, soil and sand stabilisation, paints, textile processing, pesticide, cross-linking agent, adhesive, conditioning agent, flocculant, electrophoresis agent, thickener, dye acceptor, solvent, binder, corrosion inhibitor, filler, impregnation material, reprographic agent, surface-active agent, viscosity adjustor, cleaner, construction material, reagent, complexing agent, precipitant, retention aid, dressing agent, primer, thickening agent, poly-electrolyte, sludge treatment preparation	
4. cadmium chloride	048-008-00-3	233-296-7	10108-64-2	10	0	10	10					9					39	MS List	pesticide, pharma, dye, ice-nucleating agent, lubricant	Cadmium or compounds thereof
5. potassium dichromates	024-002-00-6 / 024-007-00-3	231-906-6 / 234-329-8	7778-50-9 / 11103-86-9	10	0	10	10									7	37	Submitted dossier/ MS List	refractory agent, intermediate, electrolysis agent, treatment and coating of metals agent, sealer, cleaner, ingredient in cement, density and texture improver, reagent, indicator, tanning agent, dressing agent, mordant, pesticide, oxidizer, corrosion inhibitor, depolarizer, cross-linking agent, wood preservative, decorating porcelain, bleaching agent, waterproofing agent, depolarizer, pharma, brass pickling, explosive, glue, adhesive, synthetic perfume, alloy, lubricant, additive, paints, colouring agent	Chromium or compounds thereof

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
6.	sodium chromates	024-018-00-3 / 024-004-00-7	231-889-5 / 234-190-3	7775-11-3 / 10588-01-9	10	0	10	10									7	37	Submitted dossier / Candidate list/ MS List	corrosion inhibitor, finishing agent, mordant, drilling mud additive, component of cells for chlorate, tanning agent, pharma, aluminium etchant ingredient, paint stripper, cutting fluid, intermediate, reagent, preservative, metal finishing, mordant, pesticide, water treatment, oxidizer, bleaching agent, refining petroleum, hardener, colorant, paints electroplating agent, surface treatment, absorbent, galvano-technical agent	Chromium or compounds thereof
7.	ammonium dichromate	024-003-00-1	232-143-1	7789-09-5	10	0	10	10									7	37	Submitted dossier/ MS List	preservative, oxidising and conditioning reagent, enhance heat resistance, refractory agent, intermediate, colouring agent, paint and plastics, ceramics, cements, papers, rubbers, composition floor covering, surface finishing agent, anti-corrosion agent, hardness agent, mordant, tanning agent, fixing baths in photographic, catalyst, fuel additive, fabrication of magnetic tapes, cooling "fluid", pharma, aircrafts, motorcars, barrels, buses, cans, electrical appliances, flatware, hardware, lumber, railroad equipment, ships	Chromium or compounds thereof
8.	diphenyl ether, octabromo derivative	602-094-00-4	251-087-9	32536-52-0				10	9		9		0	9				37	MS List	additive, flame retardant	Ethers or their halogenated derivatives
9.	Phenolphthalein	604-076-00-1	201-004-7	77-09-8	10				9		0	9	9					37	MS List	indicator, reagent, colorant, cathartic, corrosion inhibitor, pesticide, pharma	Phenols or counterparts or halogenated derivatives thereof
10.	Anthracene oil, anthracene paste*	648-079-00-6 / 648-103-00-5 / 648-106-00-1 / 648-108-00-2 / 648-104-00-0	292-602-7 / 292-603-2 / 295-275-9 / 295-278-5 / 292-604-8	90640-80-5 / 90640-81-6 / 91995-15-2 / 91995-17-4 / 90640-82-7	10		10							9	7			36	Candidate list/ MS List	solvent, constituent, pesticide, intermediate, paints, preservative oil, filler	Anthracene or compounds thereof
11.	4,4'-oxydianiline	612-199-00-7	202-977-0	101-80-4	10		10				0		9				7	36	MS List	colorant, intermediate	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
12. chromium trioxide	024-001-00-0	215-607-8	1333-82-0	10	0	10						9				7	36	RoI/MS List	preservative, pharma, metal finishing, intermediate, electroplating agent, stripping agent, photography agent, hardener, oxidant, surface treatment, corrosion inhibitor, reagent, absorbent, antiadhesive agent, impregnation material, food agent, flux agent, salt for galvanic baths, pickling agent, catalyst	Chromium or compounds thereof
13. cobalt esters	027-005-00-0 / 027-006-00-6 / 027-009-00-2 / 027-010-00-8	233-334-2 / 200-755-8 / 233-402-1 / 208-169-4	10124-43-3 / 71-48-7 / 10141-05-6 / 513-79-1	10			10			0	9					7	36	MS List	drier, discoloring preventer, corrosion inhibitor, electroplating agent, pharma, process regulator, surface treatment, conductive agent, textile auxiliary, paper derivatives additive, lubricant, catalyst, foam stabilizer, bleaching agent, anodizing, paints, temperature indicator, food agent, fertiliser	Esters or their halogenated
14. Nickel and its compounds *	028-010-00-0 / 028-006-00-9 / 028-022-00-6 / 028-011-00-6 / 028-029-00-4 / 028-008-00-X / 028-012-00-1 / 028-002-00-7 / 028-003-00-2 / 028-018-00-4 / 028-009-00-5 / 028-006-00-9 / 028-007-00-4	235-715-9 / 222-068-2 / 240-841-2 / 206-761-7 / 231-743-0 / 233-071-3 / 235-008-5 / 236-068-5 / 231-111-4 / 215-215-7 / 237-396-1 / 232-104-9 / 234-349-7 / 234-829-6	12607-70-4 / 3333-67-3 / 16812-54-7 / 373-02-4 / 7718-54-9 / 10028-18-9 / 12054-48-7 / 13138-45-9 / 7440-02-0 / 1313-99-1 / 13770-89-3 / 7786-81-4 / 11113-75-0 / 12035-72-2	10	0		10		0		9					7	36	MS List	catalyst, intermediate, electroplating agent, process regulator, neutralizing compound, surface treatment, corrosion inhibitor, flotation and smelting agent, mordant, sealer, absorbent, pesticide, reagent, colouring agent, cooling agent, additive, molding sand, paints, paints, decolorizing agent, propellant, cleaner, cosmetic, pesticide, blackener, precipitant, In lithium primary batteries	Nickel or compounds thereof
15. cobalt dichloride	027-004-00-5	231-589-4	7646-79-9	10			10			0	9					7	36	Candidate list	Invisible ink, humidity & water indicator, temperature indicator, electroplating agent, paints, fertilizer & feed additive, absorbent, intermediate, lubricant, dye mordant, stabilizer, pesticide, pharma, corrosion inhibitor, electroplating agent, colouring agent, reagent, process regulator	
16. Hexachlorobenzene	602-065-00-6	204-273-9	118-74-1	10				9		0			9		7		35	MS List	pesticide, intermediate, plasticizer, rubber peptizing agent, additive	Halogenated derivatives of the aromatic hydrocarbons
17. 2,3-epoxypropyltrimethylammonium chloride	603-211-00-1	221-221-0	3033-77-0	10							9	9				7	35	MS List	manufacture of textiles, wood and paper products, intermediate	
18. Trifluralin (ISO) (containing < 0.5 ppm NPDA)	609-046-00-1	216-428-8	1582-09-8					9	9				9			7	34		food agent, pesticide	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
19.	dialkyl sulphate*	016-023-00-4 / 016-027-00-6	201-058-1 / 200-589-6	77-78-1 / 64-67-5	10	0	10					0				7	7	34	MS List	intermediate, reagent, pharma, ethylating agent, accelerator, finishing agent, dye-set agent	Esters or their halogenated derivatives
20.	allyl 2,3-epoxypropyl ether	603-038-00-1	203-442-4	106-92-3						9		9	9				7	34		stabilizer, intermediate, adhesive, surface-active agent	Ethers or their halogenated derivatives not referred to under heading 1.120 of Annex I
21.	Bisphenol A	604-030-00-0	201-245-8	80-05-7					9				9	9			7	34		antioxidant, plasticizer, intermediate, flame retardant, pesticide, process regulator, paints, adhesive,softener, construction material, stabilizer, lubricant, additive, surface treatment, filler, anti-static agent, viscosity adjustor, insulating material, hydraulic fluid, corrosion inhibitor, hardener, joint-less floor, curing agent, casting material, brake grease, primer, stopping material, catalyst, paper additive	Phenols or counterparts or halogenated derivatives thereof
22.	Lead, organic compounds *	082-002-00-1	206-104-4 / 214-005-2 / 273-688-5 / 241-894-4 / 217-170-9 / 235-702-8 / 201-075-4 / 200-897-0	301-04-2 / 1072-35-1 / 69011-06-9 / 17976-43-1 / 1762-27-2 / 12578-12-0 / 78-00-2 / 75-74-1			10					0	9	7		7		33	MS List	pesticide, paints, drier, pigment, reagent, mordant, water repellant, mean, mildew- and rot-proofing agent, astringent, pharma, stabilizer, manufacture of rubber and plastic products, antiknock agent, lubricant, intermediate, blending agent, octane improver	Lead or compounds thereof
23.	Hydroquinone	604-005-00-4	204-617-8	123-31-9						9		9				7	7	32		developer, stabilizer, antioxidant, solvent, cutting fluid, bleaching and depigmenting agent, intermediate, reagent, polymerization inhibitor, pharma, reprographic agent, photochemical, construction material, filler, colouring agent, corrosion inhibitor, pesticide, fixing agent, stopping material, moulding compound, plastic construction material, dental products, putty compound	Ketones or their halogenated derivatives adhesive,
24.	carbendazim	613-048-00-8	234-232-0	10605-21-7			10	10	9									29	MS List	filler, paints, pesticide, adhesive, construction material, process regulator, surface treatment antiadhesive agent, tightening material, preservative, additive, lubricant, impregnation agent	Esters or their halogenated derivatives not referred to under heading 1.122 of Annex I
25.	2-nitrotoluene	609-065-00-5	201-853-3	88-72-2	10		10						9					29	MS List	intermediate, paints, colouring agent	Nitrated derivatives of aromatic hydrocarbons

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
26.	cadmium oxide	048-002-00-0	215-146-2	1306-19-0	10							9	9					28	MS List	pesticide, catalyst	Cadmium or compounds thereof
27.	Cadmium	048-011-00-X	231-152-8	7440-43-9	10	0						9	9					28	MS List	stabilizer, metal finishing, pigment	Cadmium or compounds thereof
28.	di-“isoalkyl” phthalates *	607-623-00-2	249-079-5 / 247-977-1 / 201-553-2 / 248-523-5	28553-12-0 / 26761-40-0 / 84-69-5 / 27554-26-3				10	9				0	9				28	Candidate list/ MS List	plasticizer, adhesive, plastisols, colouring agent, paints, sealer, process regulator, filler, reprographic agent, binder, softener, hardener, tightening material, construction material, stabilizer, cleaner, lubricant, pesticide, additive	Encephalo- pathies or polyneuro- pathies due to organic solvents
29.	Di alkyl phthalates *	607-317-00-9 / 607-430-00-3 / 607-318-00-4	204-211-0 / 201-622-7 / 201-557-4	117-81-7 / 85-68-7 / 84-74-2				10	9				0	9				28	Candidate list	adhesive, electronic equipment component, inks, pesticide, solvent, cleaner, resin	Esters or their halogenated derivatives
30.	solvents naphtha (coal & petroleum)	648-020-00-4 / 649-341-00-2 / 649-267-00-0 / 649-356-00-4 / 649-345-00-4 / 649-263-00-9	266-013-0 / 295-529-9 / 265-192-2 / 265-199-0 / 232-489-3 / 232-453-7	65996-79-4 / 92062-15-2 / 64742-89-8 / 64742-95-6 / 8052-41-3 / 8032-32-4	10		10									7		27		solvent, adhesive, lubricant, additive, cleaner, anti-freezing agent, paints, surface treatment, antiadhesive agent, construction material, base oil, activator, degreaser, fuel, impregnation material, filler, pesticide, reprographic agent, colouring agent, corrosion inhibitor, cutting fluid, aerosol propellant, polishing agent	Aliphatic o alicyclic hydrocarbons derived from petroleum spirit or petrol
31.	Naphthas *	649-262-00-3 / 649-292-00-7 / 649-377-00-9 / 649-274-00-9 / 649-282-00-2 / 649-265-00-X / 649-275-00-4 / 649-294-00-8 / 649-273-00-3 / 649-264-00-4 / 649-338-00-6 / 649-330-00-2 / 649-329-00-7 / 649-383-00-1 / 649-335-00-X / 649-327-00-6 / 649-328-00-1 / 649-277-00-5 / 649-286-00-4 / 649-276-00-X / 649-290-00-6 / 649-295-00-3 / 649-304-00-0 / 649-348-00-0 / 649-266-00-5 / 649-326-00-0 / 649-384-00-7 / 649-374-00-2 / 649-278-00-0 / 649-350-00-1 / 649-397-00-8 / 649-271-00-2	232-443-2 / 272-185-8 / 285-510-3 / 265-066-7 / 271-267-0 / 265-042-6 / 265-067-2 / 295-431-6 / 309-945-6 / 265-041-0 / 295-433-7 / 265-185-4 / 265-178-6 / 295-434-2 / 285-511-9 / 265-150-3 / 265-151-9 / 265-073-5 / 295-440-5 / 265-068-8 / 265-056-2 / 295-441-0 / 270-993-5 / 265-071-4 / 265-046-8 / 295-447-3 / 295-442-6 / 272-206-0 / 265-086-6 / 265-089-2 / /309-976-5 / 272-186-3	8030-30-6 / 68783-09-5 / 85116-59-2 / 64741-64-6 / 68527-27-5 / 64741-42-0 / 64741-65-7 / 92045-50-6 / 101631-20-3 / 64741-41-9 / 92045-52-8 / 64742-82-1 / 64742-73-0 / 92045-53-9 / 85116-60-5 / 64742-48-9 / 64742-49-0 / 64741-70-4 / 92045-58-4 / 64741-66-8 / 64741-55-5 / 92045-59-5 / 68513-03-1 / 64741-69-1 / 64741-46-4 / 92045-65-3 / 92045-60-8 / 68783-66-4 / 64741-84-0 / 64741-87-3 / 101795-01-1 / 68783-12-0	10		10								7		27		fuel, solvent, lubricant, additive, paints, cleaner, impregnation material, surface treatment, filler, pesticide, reprographic agent, colouring agent, corrosion inhibitor, cutting fluid, construction material, aerosol propellant, antiadhesive agent, polishing agent, wood preservative, anticorrosive, degreaser, under-seal material, pharma, sealer, defoaming agent, degreasing agent	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol	

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
32. oxiran	603-023-00-X	200-849-9	75-21-8	10	0	10									7		27	MS List	pesticide, additive, solvent, emulsifier, sterilizer	Encephalopathies or polyneuropathies due to organic solvents
33. methyloxirane	603-055-00-4	200-879-2	75-56-9	10		10				0					7		27	MS List	pesticide, solvent	Encephalopathies or polyneuropathies due to organic solvents
34. lead & its inorganic compounds *	082-001-00-6	231-100-4 / 231-845-5 / 233-245-9 / 215-267-0 / 215-235-6 / 235-067-7 / 263-467-1 / 235-380-9 / 215-290-6 / 235-252-2	7439-92-1 / 7758-95-4 / 10099-74-8 / 1317-36-8 / 1314-41-6 / 12065-90-6 / 62229-08-7 / 12202-17-4 / 12141-20-7		10		10			0		0			7		27		abrasive, paints, solder, clutcher or braker linings, catalyst, cathode, flame retardant, flux, photochemical-sensitizing agent, sterilization indicator, mordant, oxidizer, flotation agent, heat stabilizer, pesticide, mean of recovering, cement, paste, vulcanizing agent, drier, lubricant, neutralizing agent, intermediate, anti-perspirant/deodorant, inhibitor, discharge, ignition surface, insulating material, colouring agent, ceramic glazes, curing agent, adhesive, additive, corrosion inhibitor	Lead or compounds thereof
35. Lead chromates	082-009-00-X / 082-010-00-5	215-693-7 / 235-759-9	1344-37-2 / 12656-85-8	10	0		10					0			7		27	Candidate list/ MS List	pigment, coating	Lead or compounds thereof
36. Nonylphenol *	601-053-00-8	246-672-0 / 284-325-5	25154-52-3 / 84852-15-3					9				9	9				27		adjuvant, process regulator, adhesive, cleaner, stabilizer, hardener	Phenols or counterpart or halogenated derivatives thereof
37. Tar derivatives *	648-139-00-1 / 648-123-00-4 / 648-131-00-8 / 648-081-00-7 / 648-082-00-2	272-361-4 / 284-891-3 / 271-020-7 / 232-361-7 / 266-024-0	68815-21-4 / 84989-03-7 / 68513-87-1 / 8007-45-2 / 65996-89-6	10	0	10								7			27		emulsifier, colouring agent, pharma, intermediate, food additive, preservative, pesticide	Tar + Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol + Organic acids
38. Distillates (coal tar) *	648-044-00-5 / 648-050-00-8 / 648-048-00-7 / 648-051-00-3	292-607-4 / 295-304-5 / 295-312-9 / 295-313-4	90640-86-1 / 91995-42-5 / 91995-51-6 / 91995-52-7	10									9	7			26	RoI/MS List	pesticide, paints, preservative oil, moisture seal, manufacture of fabricated metal products, building and repairing of ships	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol + Tar
39. Residues (coal tar), pitch distn.	648-058-00-1	295-507-9	92061-94-4	10									9	7			26	RoI/MS List	paints, moisture seal	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol + Tar + Pitch
40. 4,4'-methylenedianiline	612-051-00-1	202-974-4	101-77-9	10						0	9				7		26	Candidate list	foaming agent, resin	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
41.	phenylhydrazine	612-023-00-9	202-873-5	100-63-0	10							9					7	26	MS List	stabilizer, reagent, reducing agent, intermediate	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
42.	3,3'-dichlorobenzidine	612-068-00-4	202-109-0	91-94-1	10						0			9			7	26	MS List	intermediate, curing agent, ingredient, pigment	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
43.	trichloroethylene	602-027-00-9	201-167-4	79-01-6	10	0						9				7		26	Submitted dossier/ MS List	additive, degreaser, solvent	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
44.	tetrachloroethylene	602-028-00-4	204-825-9	127-18-4		10			9	0						7		26		cleaner, degreaser, solvent	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
45.	butyltin chlorides *	050-008-00-3 / 050-022-00-X	215-958-7 / 211-670-0	1461-22-9 / 683-18-1				10				9			7			26	MS List	pesticide, intermediate, wood preservative, stabilizer, catalyst, pharma	
46.	nitromethane	609-036-00-7	200-876-6	75-52-5							9			9		7		25		solvent	Aliphatic nitrated derivatives
47.	phenylenediamines *	612-145-00-2 / 612-147-00-3 / 612-132-00-1 / 612-136-00-3	202-430-6 / 203-584-7 / 200-806-4 / 202-969-7	95-54-5 / 108-45-2 / 74-31-7 / 101-72-4						9		9					7	25		stabilizer, antioxidant, polymerization inhibitor, intermediate, protection of rubbers against oxidation, ozone, flexcracking, adhesive	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
48.	aniline	612-008-00-7	200-539-3	62-53-3						9		9					7	25		solvent, paints	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
49.	3,4-dichloroaniline	612-202-00-1	202-448-4	95-76-1					9					9			7	25		intermediate, paints, corrosion inhibitor, thinner	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
50.	carbon disulphide	006-003-00-3	200-843-6	75-15-0					9			9				7		25		cutting fluid, pesticide, solvent	Carbon disulphide

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
51.	Bromomethane	602-002-00-2	200-813-2	74-83-9					9			9				7		25		pesticide, refrigerant and fire extinguisher, solvent, pharma	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
52.	nitrobenzene	609-003-00-7	202-716-0	98-95-3						9	0		9			7		25		solvent, intermediate, preservative, electrolytic agent, reprographic agent, inks	Nitrated derivatives of aromatic hydrocarbons
53.	styrene	601-026-00-0	202-851-5	100-42-5					9		9					7		25		solvent, cleaner, filler	Vinylbenzene
54.	thiourea	612-082-00-0	200-543-5	62-56-6						9			9				7	25		catalyst, pesticide	
55.	acrylonitrile	608-003-00-4	203-466-5	107-13-1	10						0					7	7	24	MS List	pesticide, intermediate, modifier, catalyst	Acrylonitrile
56.	N,N-dimethylalkylamide	616-011-00-4 / 616-001-00-X	204-826-4 / 200-679-5	127-19-5 / 68-12-2				10							7	7		24	MS List	solvent	Dimethylformamide
57.	1-chloro-2,3-epoxypropane	603-026-00-6	203-439-8	106-89-8	10	0									7		7	24	MS List	pesticide, solvent	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
58.	hydrazine	007-008-00-3	206-114-9	302-01-2	10						0					7	7	24	MS List	cutting fluid	
59.	cresol & its isomers*	604-004-00-9	215-293-2 / 203-577-9 / 203-398-6 / 202-423-8	1319-77-3 / 108-39-4 / 106-44-5 / 95-48-7					9						7	7		23		pesticide, active ingredient, solvent, scouring agent, intermediate, surfactant, degreaser, cleaner, additive, lubricating oil, flotation agent, pharma, cutting oil, agent for removing carbonization deposits, wood preservative, photographic developer, disinfectant, synthetic food flavor, fiber treatment agent, tanning agent, antioxidant	Alcohols or their halogenated derivatives
60.	zinc bis (dialkylthiocarbamate)	006-081-00-9 / 006-082-00-4 / 006-012-00-2	205-232-8 / 238-270-9 / 205-288-3	136-23-2 / 14324-55-1 / 137-30-4					9							7	7	23		Lubricating oil, additive, stabilizer, adhesive, reprographic agent, solvent, inks, pesticide, catalyst, vulcanization accelerator, process regulator, welding agent	Esters or their halogenated derivatives
61.	alkyl acrylates *	607-062-00-3 / 607-107-00-7 / 607-245-00-8 / 607-072-00-8 / 607-032-00-X / 607-035-00-6 / 607-115-00-0 / 607-034-00-0 / 607-071-00-2 / 607-113-00-X / 607-033-00-5 / 607-124-00-X / 607-132-00-3 / 607-249-00-X / 607-110-00-3 / 607-111-00-9 / 607-109-00-8	205-480-7 / 203-080-7 / 216-768-7 / 212-454-9 / 205-438-8 / 201-297-1 / 203-417-8 / 202-500-6 / 202-500-6 / 202-597-5 / 202-613-0 / 202-615-1 / 212-782-2 / 220-688-8 / 256-032-2 / 222-540-8 / 239-701-3 / 235-921-9	141-32-2 / 103-11-7 / 1663-39-4 / 818-61-1 / 140-88-5 / 80-62-6 / 106-63-8 / 96-33-3 / 97-63-2 / 97-86-9 / 97-88-1 / 868-77-9 / 2867-47-2 / 42978-66-5 / 3524-68-3 / 15625-89-5 / 13048-33-4							9					7	7	23		intermediate, adhesive, binder, paints, surface treatment, construction material, filler, cleaner, reprographic agent, impregnation agent, pesticide, solvent, corrosion inhibitor, colouring agent, hydraulic fluid, additive, polishing agent, cement, dressing agent, stopping material, tightening material, primer, thinner, reactive diluent, cross-linking agent, lubricant, base oil, hardener, dispersion agent, putty compound, caulking agent, viscosity adjustor, flame retardant, thickening agent, pharma, water-repellent, process regulator, antiadhesive agent, insulating material, toner, writing agent, moulding compound, casting material, resin, reagent, finishing agent, antistatic agent, stabilizer, emulsifying agent, precipitating agent, sensitizer, activator	Esters or their halogenated derivatives

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
62.	Malathion	015-041-00-X	204-497-7	121-75-5					9							7	7	23		food agent, pesticide	Esters or their halogenated derivatives not referred to under heading 1.122 of Annex I
63.	chlorpyrifos	015-084-00-4	220-864-4	2921-88-2									9	7		7		23		food agent, pesticide, corrosion inhibitor, textile auxiliary	Organophosphorus esters
64.	thiram	006-005-00-4	205-286-2	137-26-8					9							7	7	23		pesticide, wood preservative, disinfectant	
65.	Alkanes, C1-5	649-114-00-8 / 649-194-00-4 / 649-195-00-X / 649-196-00-5	292-456-4 / 270-652-0 / 270-653-6 / 270-654-1	90622-55-2 / 68475-58-1 / 68475-59-2 / 68475-60-5	10		10											20		cleaner, solvent, fuel, degreaser	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
66.	Petroleum gases, liquefied	649-202-00-6 / 649-203-00-1	270-704-2 / 270-705-8	68476-85-7 / 68476-86-8	10		10											20		fuel, lubricant, additive, paints, cleaner, impregnation agent corrosion inhibitor, filler, surface treatment, pesticide, antiadhesive agent, aerosol propellant, cutting fluid, odour agent, solvent, ignition gas, degreaser, spot (stain) remover, polishing agent, friction-reducing additive, anti-setoff agent, base oil, ignition gas, stopping material, rust remover, friction agent, intermediate, standby and enricher gas	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
67.	Distillates (petroleum) *	649-216-00-2 / 649-305-00-6 / 649-060-00-5 / 649-460-00-X / 649-381-00-0 / 649-318-00-7 / 649-453-00-1 / 649-053-00-7 / 649-051-00-6 / 649-223-00-0 / 649-333-00-9 / 649-465-00-7 / 649-467-00-8 / 649-468-00-3 / 649-221-00-X / 649-437-00-4 / 649-052-00-1 / 649-440-00-0 / 649-293-00-2 / 649-472-00-5 / 649-474-00-6 / /649-469-00-9 / 649-454-00-7 / 649-458-00-9 / 649-455-00-2 / 649-214-00-1 / 649-361-00-1	265-113-1 / 271-008-1 / 265-135-1 / 265-137-2 / 295-302-4 / 267-563-4 / 265-077-7 / 265-054-1 / 265-052-0 / 265-183-3 / 270-094-8 / 265-155-0 / 265-157-1 / 265-158-7 / 265-148-2 / 265-078-2 / 265-053-6 / 270-662-5 / 295-311-3 / 265-167-6 / 265-169-7 / 265-159-2 / 265-097-6 / 265-090-8 / 265-098-1 / 265-091-3 / 265-093-4 / 270-738-8	64742-13-8 / 68513-63-3 / 64742-34-3 / 64742-36-5 / 91995-41-4 / 67891-79-6 / 64741-76-0 / 64741-53-3 / 64741-51-1 / 64742-80-9 / 68410-98-0 / 64742-52-5 / 64742-54-7 / 64742-55-8 / 64742-46-7 / 64741-77-1 / 64741-52-2 / 68475-80-9 / 91995-50-5 / 64742-63-8 / 64742-65-0 / 64742-56-9 / 64741-96-4 / 64741-88-4 / 64741-97-5 / 64741-89-5 / 64741-91-9 / 68477-55-4	10		10			0								20		additive, hydrotropic agent, solvent, thickener, fuel, cutting fluid, lubricant, corrosion inhibitor, filler, surface-active agent, hydraulic fluid, foaming agent, paints, cleaner, process regulator, viscosity adjustor, antiadhesive agent, impregnation material, colouring agent, polishing agent, releasing agent, hardener, binder, adhesive, cooling agent, base oil, accelerator, friction-reducing additive, pesticide, activator, catalyst, degreaser, intermediate, underseal material, manufacture of wood, construction material, adjuvant, heat transferring agent	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
68.	Extracts (petroleum), solvent *	649-382-00-6 / 649-002-00-9 / 649-535-00-7 /	295-331-2 / 265-103-7 / 292-632-0 /	91995-68-5 / 64742-04-7 / 90641-08-0 /	10		10											20		cleaner, degreaser, solvent, fuel, additive, hydrotropic agent, thickener, foaming agent, binder, adhesive, filler, intermediate, vulcanizing agent	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
69.	Hydrocarbons, C3-20 *	649-401-00-8 / 649-237-00-7 / 649-236-00-1 / 649-089-00-3 / 649-093-00-5 / 649-201-00-0 / 649-291-00-1 / 649-199-00-1 / 649-083-00-0 / 649-287-00-X	270-690-8 / 307-757-9 / 307-660-1 / 271-038-5 / 271-734-9 / 270-689-2 / 270-686-6 / 270-681-9 / 270-990-9 / 295-446-8	68476-50-6 / 97722-08-2 / /97675-86-0 / 68514-36-3 / 68606-25-7 / 68476-49-3 / 68476-46-0 / 68476-40-4 / 68512-91-4 / 92045-64-2	10		10											20		pharma, cleaner, fuel, lubricant, additive, paints, impregnation agent corrosion inhibitor, filler, surface treatment, pesticide, antiadhesive agent, aerosol propellant, cutting fluid, odour agent, solvent, ignition gas, degreaser, spot (stain) remover, polishing agent, friction-reducing additive, anti-setoff agent, base oil, stopping material, rust remover, hydraulic fluid, reagent, accelerator	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
70.	buta-1,3-diene	601-013-00-X	203-450-8	106-99-0	10	0	10											20	MS List	intermediate, initiator	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
71.	Isobutane	601-004-01-8	200-857-2	75-28-5	10		10											20	MS List	catalyst, solvent	Crude paraffin + Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
72.	2-nitropropane	609-002-00-1	201-209-1	79-46-9	10						9							19	MS List	solvent	Aliphatic nitrated derivatives
73.	quinoline	613-281-00-5	202-051-6	91-22-5	10							9						19	MS List	intermediate, preservative, solvent, corrosion inhibitor, decarboxylation reagent, pharma, extractor, construction material	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
74.	cadmium sulphide	048-010-00-4	215-147-8	1306-23-6	10	0						9						19	MS List	stabiliser, pigment, semiconductor, process regulator, adhesive, hardener	Cadmium or compounds thereof
75.	1,2-Benzenedicarboxylic acid, di-branched and linear alkyl esters *	607-480-00-6 / 607-483-00-2	271-084-6 / 276-158-1 / 271-090-9	68515-42-4 / 71888-89-6 / 68515-48-0				10					0	9				19	MS List	plasticizer, reprographic agent, construction material, adhesive, paints, softener, filler, inks, tightening material, sealer	Esters or their halogenated derivatives
76.	imidazolodine-2-thione	613-039-00-9	202-506-9	96-45-7				10	9									19	MS List	pesticide, cutting fluid	Ketones or their halogenated derivatives not referred to under heading 1.121 of Annex I

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
77.	Tris(2-chloroethyl) phosphate	015-102-00-0	204-118-5	115-96-8				10		9								19	Candidate list/ MS List	pesticide, flame retardant, plasticizer	Organophosphorus esters
78.	boric acid	005-007-00-2	233-139-2	10043-35-3				10	9									19	Submitted dossier/ MS List	lubricant, preservative, additive, pesticide, metal finishing, coating agent, cooler	
79.	Furan	603-105-00-5	203-727-3	110-00-9	10						0	9						19	MS List	solvent, intermediate, adhesive	
80.	Paraffins, chlorinated *	602-080-00-8	287-196-3 / 264-150-0	85422-92-0 / 63449-39-8						9	0			9				18		paints, flame retardant	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
81.	bis(pentabromophenyl) ether		214-604-9	1163-19-5					9					9				18		flame retardant	Ethers or their halogenated derivatives
82.	3-chloropropene	602-029-00-X	203-457-6	107-05-1						9		9						18		intermediate, thermosetting resin, reagent	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
83.	4-tert-butylphenol		202-679-0	98-54-4					9					9				18		pesticide, accelerator, retarder, plasticizer	Phenols or counterparts or halogenated derivatives thereof
84.	4-(1,1,3,3-tetramethylbutyl) phenol	604-075-00-6	205-426-2	140-66-9					9					9				18		intermediate, paints	Phenols or counterparts or halogenated derivatives thereof
85.	diuron	006-015-00-9	206-354-4	330-54-1					9	9								18		paints, adhesive, process regulator, impregnation material, thinner, corrosion inhibitor, pharma	
86.	octamethyl-cyclotetrasiloxane	014-018-00-1	209-136-7	556-67-2					9				9					18		intermediate, adhesive, filler, cleaner, construction material, paints, surface treatment, fuel additive, reprographic agent, process regulator, impregnation material, softener, antiadhesive agent, viscosity adjustor, pharma, insulating material, absorbent, ink, polishing agent, antifoaming agent, surfactant, sealer, casting material, solvent	
87.	bis(tributyltin) oxide	050-008-00-3	200-268-0	56-35-9					9					9				18	Candidate list	pesticide, sanitizer, preservative	
88.	2-(2-aminoethylamino) ethanol	603-194-00-0	203-867-5	111-41-1				10					0				7	17	MS List	intermediate, antifuming agent, dyestuff, surfactant, resin, pharma, pesticide, process regulator, filler, flux agent, anti-condensation agent, welding agent, grinding material, surface treatment, anti-freezing agent, photochemical, adhesive, reagent, lubricant	Alcohols or their halogenated derivatives

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
89.	benzene	601-020-00-8	200-753-7	71-43-2	10	0										7		17	MS List	cleaner, degreaser, solvent	Benzene or counterparts thereof
90.	beryllium / beryllium oxide	004-001-00-7 / 004-003-00-8	231-150-7 / 215-133-1	7440-41-7 / 1304-56-9	10	0											7	17	MS List	alloy, welding agent, catalyst, intermediate	Beryllium (glucinium) or compounds thereof
91.	carbon monoxide	006-001-00-2	211-128-3	630-08-0				10								7		17	MS List	reducing agent, purification agent, intermediate, construction material, reagent, pharma, process regulator, welding agent, fuel, heat transferring agent, building material and additive	Carbon monoxide
92.	dichromium tris(chromate)	024-010-00-X	246-356-2	24613-89-6	10	0											7	17	MS List	corrosion inhibitor, catalyst, surface treatment	Chromium or compounds thereof
93.	formaldehyde	605-001-00-5	200-001-8	50-00-0		10				0							7	17		cooler, lubricant, cleaner, coating agent, hardener, solvent, disinfectant, degreaser, preservative, pesticide, adhesive,	Formaldehyde
94.	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	10	0									7			17	MS List	pesticide, solvent	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
95.	chloroethylene	602-023-00-7	200-831-0	75-01-4	10	0										7		17	MS List	pesticide, intermediate, oxidation inhibitor, refrigerant & extraction solvent, adhesive, aerosol propellant, additive	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
96.	2-chlorobuta-1,3-diene	602-036-00-8	204-818-0	126-99-8	10						0					7		17	MS List	intermediate, adhesive, filler, plastic additive, colouring agent	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
97.	benzoyl chloride	607-012-00-0	202-710-8	98-88-4		10											7	17		intermediate, dye, fastness improver, treatment agent, pharma, adhesive, pesticide, food agent, filler, additive, resin	Halogenated derivatives of the aromatic hydrocarbons
98.	1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6 (1H,3H,5H)-trione	615-021-00-6	219-514-3	2451-62-9			10										7	17	MS List	hardener, paints	Ketones or their halogenated derivatives not referred to under heading 1.121 of Annex I
99.	2-alkoxyethanol	603-011-00-4 / 603-012-00-X / 603-014-00-0	203-713-7 / 203-804-1 / 203-905-0	109-86-4 / 110-80-5 / 111-76-2				10								7		17	MS List	adjuvant, solvent, pesticide, polishing agent, disinfectant, degreaser, cleaner	methyl ether of methylene glycol / ethyl ether of ethylene glycol + Encephalopathies or polyneuropathies due to organic solvents

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease	
100.	C,C'-azodi(formamide)	611-028-00-3	204-650-8	123-77-3		10											7	17			Blowing agent, aging & bleaching ingredient,foaming agent, catalyst, insulating material, construction material, cement filler, colouring agent,additive	
101.	aminophenol *	612-033-00-3 / 612-128-00-X	202-431-1 / 204-616-2	95-55-6 / 123-30-8								9					7	16			reducing agent, corrosion, inhibitor, intermediate, pharma, colouring agent, antioxidant, oil additive, lubricating agent, wood stain, photochemical	Alcohols or their halogenated derivatives
102.	resorcinol	604-010-00-1	203-585-2	108-46-3					9								7	16			disinfectant	Alcohols or their halogenated derivatives
103.	4-aminophenol	612-128-00-X	204-616-2	123-30-8								9					7	16			photochemical, pharma, antioxidant, additive, intermediate, reducing agent, corrosion inhibitor, lubricating agent, colouring agent	Alcohols or their halogenated derivatives
104.	N,N-dimethylaniline	612-016-00-0	204-493-5	121-69-7						9						7		16			reagent, catalytic hardener, activator, solvent, intermediate, stabilizer, curing accelerator, construction material, process regulator, adhesive, filler, stopping material, pharma, lubricant, plastic additive, corrosion inhibitor	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
105.	p-toluidine	612-160-00-4	203-403-1	106-49-0						9							7	16			dye, reagent, filler, stopping material	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
106.	p-phenetidine	612-207-00-9	205-855-5	156-43-4								9					7	16			food agent	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
107.	amitrole	613-011-00-6	200-521-5	61-82-5					9				7					16			pesticide, lubricant, additive	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
108.	ethylbenzene	601-023-00-4	202-849-4	100-41-4							9					7		16			cleaner, degreaser, solvent	Benzene or counterparts thereof

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
109. toluene	601-021-00-3	203-625-9	108-88-3									9			7		16		additive, degreaser, solvent, cleaner, paints	Benzene or counterparts thereof
110. n-hexane	601-037-00-0	203-777-6	110-54-3									9			7		16		degreaser, adhesive, fuel, solvent, cleaner	Crude paraffin + Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
111. 4-tert-butyltoluene		202-675-9	98-51-1									9			7		16		solvent	Encephalopathies or polyneuropathies due to organic solvents
112. (R)-p-mentha-1,8-diene	601-029-00-7	227-813-5	5989-27-5									9				7	16		cleaner, solvent, pesticide, degreaser, flavouring agent	Encephalopathies or polyneuropathies due to organic solvents
113. vinyl acetate	607-023-00-0	203-545-4	108-05-4							9				7			16		modifier, intermediate, filler, adhesive, paints, reprographic agent, surface treatment, corrosion inhibitor, colouring agent, solvent, moulding compound, sensitizer, stopping material, dispersion adhesive	Esters or their halogenated derivatives
114. Bis(hydroxylammonium) sulphate	612-123-00-2	233-118-8	10039-54-0						9							7	16		surface treatment, photochemical, cleaner, corrosion inhibitor, electroplating agent, reducing agent, reprographic agent, stabilizer, developer	Esters or their halogenated derivatives
115. Dimethoate	015-051-00-4	200-480-3	60-51-5					9							7		16		food agent, pesticide, corrosion inhibitor, textile auxiliar	Esters or their halogenated derivatives not referred to under heading 1.122 of Annex I
116. 2,2'-[(1-methylethylidene) bis (4,1-phenyleneoxymethylene)] bisoxirane	603-073-00-2	216-823-5	1675-54-3					9								7	16		sealer, encapsulating agent, binder, adhesive, intermediate, paints, construction material, filler, surface treatment, reprographic agent, process regulator, colouring agent, flux agent, viscosity adjustor, corrosion inhibitor, bleaching agent, joint-less floor, moulding compound, hardener, curing agent, tightening material, primer	Ethers or their halogenated derivatives
117. tert-butyl methyl ether	603-181-00-X	216-653-1	1634-04-4					9							7		16		solvent	Ethers or their halogenated derivatives
118. [(tolyloxy)methyl]oxirane	603-056-00-X	247-711-4	26447-14-3							9						7	16		reactive diluent, paints, adhesive, filler, construction material, intermediate, odour agent, process regulator, floor covering material	Ethers or their halogenated derivatives not referred to under heading 1.120 of Annex I

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
119. 1,3-dichloropropene *	602-030-00-5	233-195-8 / 208-826-5	10061-01-5 / 542-75-6							9						7	16		pesticide, solvent	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
120. 1,1-dichloroethylene	602-025-00-8	200-864-0	75-35-4						9						7		16		cleaner, degreaser, solvent	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
121. iodomethane	602-005-00-9	200-819-5	74-88-4						9						7		16		pesticide, imbedding material, light sensitive etching agent, component in fire extinguishers	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
122. dichlorobenzene *	602-035-00-2 / 602-034-00-7	203-400-5 / 202-425-9	106-46-7 / 95-50-1						9	0					7		16		bleach agent, pesticide, solvent, cleaner, inks	Halogenated derivatives of the aromatic hydrocarbons
123. chlorocresol *	604-014-00-3 / 604-050-00-X	200-431-6 / 216-381-3	59-50-7 / 1570-64-5					9								7	16		cutting fluid, pesticide, pharma, adhesive, cosmetic, colouring agent, paints, cleaner, surface treatment, reagent, disinfectant, lubricant, conserving agent, intermediate, additive	Halogenated derivatives of the aromatic hydrocarbons
124. methylenediphenyl diisocyanate & isocyanatobenzyl)phenyl isocyanate	615-005-00-9	202-966-0 / 247-714-0 / 227-534-9	101-68-8 / 26447-40-5 / 5873-54-1						9							7	16		binder, adhesive, additive, elastomer, hardener, foaming agent, paints, process regulator, intermediate, construction material, filler, heat transferring agent, reagent, bleaching agent, hardener, joint-less floor, moulding compound, surface treatment, curing agent, casting material, primer, resin, sealer	Isocyanates
125. diisocyanates *	615-006-00-4 / 615-009-00-0 / 615-011-00-1	209-544-5 / 247-722-4 / 225-863-2 / 212-485-8	584-84-9 / 26471-62-5 / 5124-30-1 / 822-06-0						9	0						7	16		additive, solvent, hardener, paints, construction material, adhesive, surface treatment, casting material, colouring agent	Isocyanates
126. 3,5,5-trimethyl cyclohex-2-enone	606-012-00-8	201-126-0	78-59-1						9						7		16		thinner, solvent	Ketones or their halogenated derivatives
127. naphthalene	601-052-00-2	202-049-5	91-20-3						9	0					7		16		pesticide, cleaner	Naphthalene or naphthalene counterparts
128. 2-methyl-4,6-dinitro-phenol	609-020-00-X	208-601-1	534-52-1							9						7	16		pesticide, pharma, wood preservative	Nitrated derivatives of phenols or their counterparts
129. tributyl phosphate	015-014-00-2	204-800-2	126-73-8						9						7		16		solvent	Organophosphorus esters

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
130. 4-vinylcyclohexene		202-848-9	100-40-3							9					7		16		intermediate, antioxidant, paints, adhesive, binder	Other aliphatic hydrocarbons
131. phenol	604-001-00-2	203-632-7	108-95-2								9				7		16		cleaner, pesticide, bleach agent, solvent	Phenols or counterparts or halogenated derivatives thereof
132. cobalt	027-001-00-9	231-158-0	7440-48-4							9						7	16		paints	Respiratory ailments caused by the inhalation of dust from cobalt
133. metham-sodium	006-013-00-8	205-293-0	137-42-8					9							7		16		pesticide, treatment and coating of metals	
134. Cobalt sulphide	027-003-00-X	215-273-3	1317-42-6							9						7	16		catalyst, process regulator	
135. glyoxal	605-016-00-7	203-474-9	107-22-2								9					7	16		insolubilizing agent, reducing agent, intermediate, embalming agent, cross-linking agent, disinfectant, pesticide, preservative, adhesive, viscosity adjustor, construction material, filler, paints, cleaner, colouring agent, surface-active agent, photochemical, dustbinder, cement thickening agent, primer, activator, hardener, reagent	
136. Tetrachloroisophthalonitrile	608-014-00-4	217-588-1	1897-45-6						9							7	16		paints, pesticide	
137. piperazine	612-057-00-4	203-808-3	110-85-0									9				7	16		scruber, hardener, intermediate, pharma, corrosion inhibitor, surface-active agent, pesticide, accelerator, adhesive,photo-chemical, process regulator, reagent	
138. N-propyl-N-[2-(2,4,6-trichlorophenoxy) ethyl]-1H-imidazole-1-carboxamide	613-128-00-2	266-994-5	67747-09-5					9							7		16		food agent, pesticide	
139. 2-chloroacetamide	616-036-00-0	201-174-2	79-07-2									9				7	16		intermediate, pesticide, preservative, antiseptic, additive, surface treatment, paints, cleaner, polishing agent	
140. 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl) triethanol	613-114-00-6	225-208-0	4719-04-4											7		7	14		pesticide, lubricant, additive, cutting fluid, cleaner, surface treatment, paints, hydraulic fluid, reprographic agent antiadhesive agent, colouring agent, corrosion inhibitor, cooling agent, preservative, hydraulic oil, disinfectant, inhibitor, transmission medium	Alcohols or their halogenated derivatives not referred to under heading 1.118 of Annex I
141. biphenyl	601-042-00-8	202-163-5	92-52-4											7	7		14		pesticide, intermediate, heat transfer agent, dye, solvent	Diphenyl
142. azinphos-methyl	015-039-00-9	201-676-1	86-50-0												7	7	14		food agent, pesticide, corrosion inhibitor, textile auxiliar	Esters or their halogenated deriva-tives not referred to under heading 1.122 of Annex I

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
143. naphthol *	604-029-00-5 / 604-007-00-5	201-969-4 / 205-182-7	90-15-3 / 135-19-3											7		7	14		cutting fluid, antioxidant, pesticide, intermediate, pharma, perfume, lubricant, colouring agent	Naphthols or counterparts or halogenated derivatives thereof
144. maleic anhydride	607-096-00-9	203-571-6	108-31-6											7		7	14		intermediate, pesticide, preservative, permanent-press resin, oil additive, finishing agent, bonding agent, construction material, adhesive, paints, surface treatment, filler, reprographic agent, flame retardant, cleaner, colouring agent, impregnation material, corrosion inhibitor, glazing material, enamel, polishing agent, reagent, dispersion agent	
145. 2-methoxypropanol	603-106-00-0	216-455-5	1589-47-5				10										10	MS List	byproduct, solvent, paints, cleaner, reprographic agent, pesticide, colouring agent, surface treatment, filler, corrosion inhibitor, flux agent, under-seal material, degreaser, polishing agent, hardener, thinner	Alcohols or their halogenated derivatives
146. Residues (petroleum)	649-043-00-2 / 649-012-00-3 / 649-018-00-6 / 649-024-00-9	295-511-0 / 265-076-1 / 265-193-8 / 270-675-6	92061-97-7 / 64741-75-9 / 64742-90-1 / 68476-33-5	10													10		tanning and dressing agent, intermediate, fuel, paints, manufacture of wood, articles of straw and plaiting material, heating agent, cleaner	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
147. Residual oils (petroleum)	649-462-00-0 / 649-470-00-4 / 649-456-00-8 / 649-471-00-X / 649-459-00-4	265-143-5 / 265-160-8 / 265-096-0 / 265-166-0 / 265-101-6	64742-41-2 / 64742-57-0 / 64741-95-3 / 64742-62-7 / 64742-01-4	10													10		lubricant, additive, cutting fluid, hydraulic fluid, corrosion inhibitor, antiadhesive agent, filler, oils, cooling agent, accelerator	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
148. Lubricating oils	649-484-00-0 / 649-527-00-3 / 649-482-00-X / 649-528-00-9 / 649-497-00-1 / 649-529-00-4 / 649-483-00-5 / 649-481-00-4 / 649-530-00-X / 649-498-00-7	278-012-2 / 309-874-0 / 276-737-9 / 309-875-6 / 295-423-2 / 309-876-1 / 276-738-4 / 276-736-3 / 309-877-7 / 295-424-8	74869-22-0 / 101316-69-2 / 72623-86-0 / 101316-70-5 / 92045-42-6 / 101316-71-6 / 72623-87-1 / 72623-85-9 / 101316-72-7 / 92045-43-7														10		lubricant, additive, hydraulic fluid, corrosion inhibitor, cutting fluid, surface treatment, anti-freezing agent, antiadhesive agent, bleaching agent, cleaner, complexing agent, flotation agent, stabilizer, construction material, filler, rust remover, textile auxiliar, reagent, fertilizer, transmission medium, de-icing agent, activator, absorbent, accelerator, intermediate, oils, vulcanizing agent, cooling agent, anti-foaming agent, dispersion adhesive, pesticide	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
149. Petrolatums (petroleum)	649-255-00-5 / 649-258-00-1 / 649-260-00-2 / 649-254-00-X	265-206-7 / 308-149-6 / 309-706-6 / 232-373-2	64743-01-7 / 97862-97-0 / 100684-33-1 / 8009-03-8	10													10		corrosion inhibitor, surface treatment, lubricant, additive, paints, base oil, under-seal material, polishing agent	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
150. Slack wax (petroleum)	649-244-00-5	265-165-5	64742-61-6	10													10		impregnation material, corrosion inhibitor, surface treatment, anti-set-off and antiadhesive agent, polishing agent, anticaking agent, under-seal material	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
151. Alkanes, C12-26-branched and linear	649-242-00-4	292-454-3	90622-53-0	10													10		solvent	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
152. Pitch, coal tar	648-055-00-5 / 648-069-00-1	266-028-2 / 292-651-4	65996-93-2 / 90669-57-1	10	0												10	Candidate list/ MS List	binder, additive, pesticide, paints, moisture seal, filler	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol + Tar + Pitch
153. o-toluidine	612-091-00-X	202-429-0	95-53-4	10	0												10	MS List	vulcanization accelerator, process regulator, paints, cleaner, intermediate	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
154. 4,4'-methylenebis [2-chloroaniline]	612-078-00-9	202-918-9	101-14-4	10	0												10	MS List	colorant	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivative thereof
155. Diarsenic trioxide	033-003-00-0	1327-53-3 / 215-481-4	215-481-4 / 1327-53-5	10	0												10	Candidate list	alloying agent, pesticide, purification agent, intermediate, mordant, flotation reagent, ceramic enamels, paints, decolorizing agent, preservative, reagent, flame retardant	Arsenic or compounds thereof
156. arsenic acid & salts	033-005-00-1	231-901-9 / 231-547-5 / 231-904-5	7778-39-4 / 7631-89-2 / 7778-44-1	10	0												10	RoI/MS List	pesticide, preservative, pigment,	Arsenic or compounds thereof
157. gallium arsenide	033-002-00-5	215-114-8	1303-00-0														10		semiconductor, infrared emitte	Arsenic or compounds thereof
158. Refractory Ceramic Fibres (RCF)	650-017-00-8			10						0							10	Candidate list/ MS List	insulating fibre, flame retardant, aircraft/aerospace heat shield, catalytic converter, metal reinforcement, brake pad, air bag, fiber, polishing glass, smoothing bisque ware, abrasive, intermediate, semiconductor, deoxidant, refractory agent, ceramics, construction material, grinding material, filler, surface treatment, paints, process regulator, absorbent, odour agent, cleaner, fireproof cement, cast compound	Broncho-pulmonary ailments caused by man-made mineral fibres

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
159. cadmium nitrate	048-001-00-5	233-710-6	10325-94-7	10													10		photographic emulsion, colorant, intermediate	Cadmium or compounds thereof
160. strontium chromate	024-009-00-4	232-142-6	7789-06-2	10	0												10	MS List	corrosion inhibitor, colorant, reagent, paints, filler, adhesive,conserving agent, protective chemical, catalyst, activator	Chromium or compounds thereof
161. Paraffin oils (petroleum), catalytic dewaxed heavy	649-477-00-2	265-174-4	64742-70-7	10													10		solvent	Crude paraffin + Mineral and other oils
162. 1,2-dimethoxyethane	603-031-00-3	203-794-9	110-71-4				10										10	MS List	solvent	Encephalopathies or polyneuropathies due to organic solvents
163. bis(2-methoxyethyl) ether	603-139-00-0	203-924-4	111-96-6				10										10	MS List	solvent	Encephalopathies or polyneuropathies due to organic solvents
164. 1,2-bis (2-methoxyethoxy)ethane	603-176-00-2	203-977-3	112-49-2				10				0						10	MS List	solvent	Encephalopathies or polyneuropathies due to organic solvents
165. 2-ethoxyethyl acetate	607-037-00-7	203-839-2	111-15-9				10										10	MS List	solvent	Encephalopathies or polyneuropathies due to organic solvents
166. 2-bromopropane	602-085-00-5	200-855-1	75-26-3				10										10	MS List	pesticide, solvent	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
167. alfa-chlorotoluene	602-037-00-3	202-853-6	100-44-7	10	0												10	MS List	solvent	Halogenated derivatives of the aromatic hydrocarbons
168. Benzidine-based dyes		222-530-3 / 226-789-3	3520-72-7 / 5468-75-7	10													10		colouring agent, paints, reprographic agent, construction material, filler, process regulator, adhesive, hardener, resin, binder	Halogenated derivatives of the aromatic hydrocarbons
169. N-Methylpyrrolidon	606-021-00-7	212-828-1	872-50-4				10										10	MS List	solvent, hydrotropic agent, pesticide, adhesive, additive	Ketones or their halogenated derivatives not referred to under heading 1.121 of Annex I
170. Creosote / Creosote oil	648-101-00-4 / 648-098-00-X	232-287-5 / 292-605-3	8001-58-9 / 90640-84-9	10	0												10		pesticide, preservative	Mineral and other oils
171. Lubricating greases	649-243-00-X	278-011-7	74869-21-9	10													10		lubricant, additive, corrosion inhibitor, flotation agent, foaming agent	Mineral and other oils
172. Quartz (SiO2)		238-878-4	14808-60-7	10													10		polishing agent, pesticide, molding sand, paints	Silicosis
173. Diboron trioxide	005-008-00-8	215-125-8	1303-86-2				10										10	MS List	pesticide, wood preservative	

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
174. Disodium tetraborates	005-011-00-4 / 005-011-01-1 / 005-011-02-9	235-541-3 / 1330-43-4 / 215-540-4	12267-73-1 / 215-540-4 / 12179-04-3				10										10	Submitted dossier/ MS List	pesticide, intermediate, , soldering agent, tanning agent, cleaner, aging agent, curing agent, buffer, fluxing agent, alkalizing agent, emulsifying agent, fiberglass insulation agent, enamel, fertilizer, corrosion inhibitor, bleaching agent, detergent, oxidizer, pharma, cosmetic, preservative, adhesive, wicks, electric condensers, anti-freezing agent, photochemical, surface treatment, lubricant, additive, fixing agent, reprographic agent, reagent, cooling agent, disinfectant, personal care products, metal working fluids, water treatment, hardener, slag formation agent, flame retardant, abrasive, cement, catalyst/inhibitor, colour pigment, construction material	
175. Perboric acid, sodium salt	005-017-01-4	234-390-0	11138-47-9				10					0					10	MS List	cleaner, pesticide, preservative	
176. potassium bromate	035-003-00-6	231-829-8	7758-01-2	10						0							10		pesticide, oxidizer, maturing agent, dough conditioner, food additive, improving agent, reagent, cleaner, neutralizer or oxidizer	
177. formamide	616-052-00-8	200-842-0	75-12-7				10										10	MS List	solvent	
178. cyclohexylamine	612-050-00-6	203-629-0	108-91-8									9					9		water treatment, rubber accelerator, intermediate, corrosion inhibitor, adhesive, bleaching agent, cleaner, lubricant, additive, buffer, process regulator, reducing agent	Aliphatic amines and halogenated derivatives thereof
179. trisodium nitrilotriacetate	607-620-00-6	225-768-6	5064-31-3						9	0							9		sequestrant, adjuvant, cleaner	Aliphatic nitrated derivatives
180. cyclododecane		206-033-9	294-62-2										9				9	Submitted dossier/ MS List	plasticizer	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
181. isoprene	601-014-00-5	201-143-3	78-79-5							9							9	MS List	intermediate, filler, construction material, adhesive,additive	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
182. camphene		201-234-8	79-92-5										9				9		food additive, flavoring agent, intermediate, pharma, plasticizer, cleaner, paints, pesticide, odour agent, surface treatment, solvent, disinfectant, perfume, polishing agent	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
183.	1,2-epoxybutane	603-102-00-9	203-438-2	106-88-7						9	0							9		intermediate, stabilizer, corrosion inhibitor, cleaner, softener, surface treatment, rinsing agent, water softener	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
184.	anthracene		204-371-1	120-12-7										9				9	Candidate list	pesticide, molding sand, radiation equipment	Anthracene or compounds thereof
185.	diantimony trioxide	051-005-00-X	215-175-0	1309-64-4						9								9		flame retardant	Antimony and derivatives thereof
186.	4-hydroxybenzoic acid		202-804-9	99-96-7					9									9		pesticide, intermediate, food preservative, corrosion inhibitor, anti-oxidant and emulsifier	Aromatic acids
187	tetrabromophtalic anhydride		211-185-4	632-79-1										9				9		flame retardant, intermediate	Aromatic acids - aromatic anhydrides or their halogenated derivatives
188.	N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine		212-344-0	793-24-8										9				9		antioxidant, polymer stabilizer adhesive,vulcanizing agent, reagent	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
189.	1,3-diphenylguanidine	612-149-00-4	203-002-1	102-06-7									9					9		vulcanization accelerator, activator, process regulator, welding agent, adhesive,filler, tightening material, adhesive, hardener	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
190.	N,N'-bis(1,4-dimethylpentyl)-p-phenylenediamine		221-375-9	3081-14-9										9				9		vulcanizing agent	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
191.	Asphalt		232-490-9	8052-42-4							9							9		fertilizer	Broncho-pulmonary ailments and cancers associated with exposure to bitumen
192.	Pin-2(3)-ene		201-291-9	80-56-8										9				9		pesticide, solvent	Encephalopathies or polyneuropathies due to organic solvents
193.	1,4-dioxane	603-024-00-5	204-661-8	123-91-1						9	0							9		solvent	Encephalopathies or polyneuropathies due to organic solvents

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
194. 2-(2-methoxyethoxy)ethanol	603-107-00-6	203-906-6	111-77-3									9					9		adjuvant, solvent	Encephalopathies or polyneuropathies due to organic solvents
195. pyrocatechol	604-016-00-4	204-427-5	120-80-9							9							9		solvent, developer	Encephalopathies or polyneuropathies due to organic solvents
196. biphenyl-2-ol	604-020-00-6	201-993-5	90-43-7					9									9		pesticide, cleaner, solvent	Encephalopathies or polyneuropathies due to organic solvents
197. 1,3,5-trioxane	605-002-00-0	203-812-5	110-88-3									9					9		pesticide, solvent	Encephalopathies or polyneuropathies due to organic solvents
198. 1,2,4-triazole	613-111-00-X	206-022-9	288-88-0									9					9		cutting fluid, solvent	Encephalopathies or polyneuropathies due to organic solvents
199. 1-vinyl-2-pyrrolidone	613-168-00-0	201-800-4	88-12-0						9								9		solvent, binder, pharma, disinfectant, additive, intermediate, reactive thinner, adhesive, reprographic agent, paints, surface treatment, cleaner, lubricant, pesticide, preservative, colouring agent, hardener	Encephalopathies or polyneuropathies due to organic solvents
200. 2-ethylhexyl 4-methoxycinnamate		226-775-7	5466-77-3					9									9		sunscreen ingredient, intermediate	Esters or their halogenated derivatives
201. vinyl neodecanoate		256-905-8	51000-52-3										9				9		construction material, filler, intermediate, paints	Esters or their halogenated derivatives
202. 2-furaldehyde	605-010-00-4	202-627-7	98-01-1						9								9		pesticide, solvent	Furfural
203. hexabromocyclododecane		221-695-9 / 247-148-4	3194-55-6 / 25637-99-4									9					9	Candidate list	flame retardant	Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
204. trichlorobenzene	602-087-00-6	204-428-0 / 201-757-1	120-82-1 / 87-61-6									9					9	MS List	solvent, pesticide, intermediate, transformer fluid, dye carrier, coolant, dye, lubricant	Halogenated derivatives of the aromatic hydrocarbons
205. acenaphthene		201-469-6	83-32-9									9					9		molding sand	Naphthalene or naphthalene counterparts
206. Bis(isopropyl) naphthalene		254-052-6	38640-62-9									9					9		intermediate, solvent, construction material, process regulator, reagent, adhesive, filler, paints, flooring material, hardener, curing agent, moulding compound, plastic additive, cast compound	Naphthalene or naphthalene counterparts

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
207.	4-nitrophenol	609-015-00-2	202-811-7	100-02-7					9									9		pesticide, cutting fluid	Nitrated derivatives of phenols or their counterparts
208.	2-ethylhexanoic acid	607-230-00-6	205-743-6	149-57-5									9					9		cosolvent, defoamer, drier, gelling agent, catalyst, heat stabilizer, intermediate, corrosion inhibitor, process regulator, anti-freezing agent, cutting fluid, cleaner, surface treatment, paints, filler, impregnation material, pesticide, electroplating agent, fuel additive, food agent, cooling agent, polishing agent	Organic acids
209.	diphenyl phosphates		214-987-2 / 249-828-6	1241-94-7 / 29761-21-5										9				9		flame retardant, plasticizer, reprographic agent, lubricant, additive, softener, adhesive, paints, inks, cracking indicator	Organophosphorus esters
210.	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol	604-074-00-0	201-236-9	79-94-7										9				9		pesticide, flame retardant	Phenols or counterparts or halogenated derivatives thereof
211.	2,4-di-tert-butylphenol		202-532-0	96-76-4					9									9		lubricant, additive, stabilizer, antioxidant	Phenols or counterparts or halogenated derivatives thereof
212.	xlenol	604-006-00-X / 604-037-00-9	215-089-3 / 203-606-5	1300-71-6 / 108-68-9					9									9		pesticide, intermediate, disinfectant, solvent, pharma, plasticizer, additive, lubricant and gasoline, wetting agent, dyestuff, antioxidant	Phenols or counterparts or halogenated derivatives thereof
213.	2,4,6-trichlorophenol	604-018-00-5	201-795-9	88-06-2						9	0							9		pesticide, intermediate, reagent	Phenols or counterparts or halogenated derivatives thereof
214.	Triphenylphosphine		210-036-0	603-35-0										9				9		intermediate, construction material, adhesive, paints, flooring material	Phosphorus or compounds thereof
215.	Carbon black		215-609-9	1333-86-4							9							9		polishing agent, additive, colorant	Soot
216.	pentachlorobenzenethiol		205-107-8	133-49-3										9				9	MS List	peptizing agent, intermediate	Thiophenols or counterparts or halogenated derivatives
217.	Carrageenan		232-524-2	9000-07-1							9							9		adjuvant	
218.	cobalt dihydroxide		244-166-4	21041-93-0							9							9		construction material, paints, colouring agent, process regulator, plastic construction material	
219.	titanium dioxide		236-675-5	13463-67-7							9							9		paints	

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
220. tricobalt compounds		212-751-3 / 215-157-2	866-81-9 / 1308-06-1							9							9		pharma, odour agent, colouring agent, process regulator, food agent, additive	
221. hexamethyldisiloxane		203-492-7	107-46-0										9				9		intermediate, adhesion promotor-priming agent, blocking agent, protective layer, antifoam, antifatulent agent, lubricant, paints, surface treatment, cleaner, impregnation material, pharma	
222. methyl paraben		202-785-7	99-76-3					9									9		pesticide, additive, inhibitor, preservative	
223. tetrabutyltin		215-960-8	1461-25-2					9									9		stabilizing agent rust-inhibiting agent, lubricant and fuel additive, polymerization catalyst, hydrochloric acid scavenger, intermediate	
224. 3-(4-isopropylphenyl)- 1,1-dimethylurea	006-044-00-7	251-835-4	34123-59-6						9								9		pesticide, paint and varnish	
225. molybdenum trioxide	042-001-00-9	215-204-7	1313-27-5						9								9		alloying agent, reagent, corrosion inhibitor, catalyst, pigment, intermediate, process regulator, heat transferring agent, softener, feed additive, ceramic material	
226. furfuryl alcohol	603-018-00-2	202-626-1	98-00-0						0								9		adhesive, solvent	
227. acetaldehyde	605-003-00-6	200-836-8	75-07-0						9	0							9		synthetic flavor, adjuvant, alcohol denaturant, intermediate, adhesive, reprographic agent, paints, construction material, surface treatment, cleaner, pharma, filler, cutting fluid, tanning agent, cement ink, cooling agent, aroma booster, resin, stopping material, primer	
228. crotonaldehyde	605-009-00-9	224-030-0	4170-30-3								9						9		pesticide, intermediate, warning agent, alcohol denaturant, stabilizer, solvent, tear gas, fuel-gas, tanning agent, odorant	
229. 1,4,5,6,7,7-hexachloro- 8,9,10-trinorborn-5-ene- 2,3-dicarboxylic anhydride	607-101-00-4	204-077-3	115-27-5										9				9		flame retardant, intermediate, hardener, adhesive, binder	

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
230. (3-chloro-2-hydroxypropyl) trimethylammonium chloride	612-238-00-8	222-048-3	3327-22-8						9								9		manufacture of textiles, wood & articles of straw and plaiting material, intermediate	
231. cis-4-[3-(p-tert-butylphenyl)-2-methylpropyl]-2,6-dimethylmorpholine	613-124-00-0	266-719-9	67564-91-4									9					9		pesticide, food agent	
232. Acetone	606-001-00-8	200-662-2	67-64-1												7		7		cleaner, degreaser, solvent	Acetone
233. acetonitrile	608-001-00-3	200-835-2	75-05-8												7		7		solvent	Acetonitrile
234. citronellol		203-375-0	106-22-9														7	7	pesticide, odour agent, cleaner, absorbent, surface treatment, cosmetic, impregnation material, aerosol propellant, pharma, paints, degreaser, sanitation agent, polishing agent, air cleaner, disinfectant	Alcohols or their halogenated derivatives not referred to under heading 1.118 of Annex I
235. Geraniol		203-377-1	106-24-1														7	7	feromone, pesticide, perfume, repellent	Alcohols or their halogenated derivatives not referred to under heading 1.118 of Annex I
236. ethylenediamine	612-006-00-6	203-468-6	107-15-3														7	7	pesticide, solvent, emulsifier, stabilizer, inhibitor, pharma, reagent, intermediate, process regulator, paints, surface treatment, corrosion inhibitor, lubricant, additive, adhesive, reprographic agent, construction material, electroplating agent, colouring agent, photochemical, filler, curing agent, oils, caulking compound	Aliphatic amines and halogenated derivatives thereof
237. 2,2'-iminodi(ethylamine)	612-058-00-X	203-865-4	111-40-0														7	7	solvent	Aliphatic amines and halogenated derivatives thereof
238. 3,6,9-triazaundecamethylenediamine	612-060-00-0	203-986-2	112-57-2														7	7	solvent	Aliphatic amines and halogenated derivatives thereof
239. 3-aminopropyldimethylamine	612-061-00-6	203-680-9	109-55-7														7	7	intermediate, corrosion inhibitor, curing agent, surfactant, soap, water treatment, adhesive, process regulator, paints, cleaner, anti-static agent, construction material, odour agent, fuel additive, hardener, activator	Aliphatic amines and halogenated derivatives thereof

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
240.	3-aminomethyl-3,5,5-trimethylcyclohexylamine	612-067-00-9	220-666-8	2855-13-2													7	7		intermediate, curing agent, construction material, paints, process regulator, adhesive, surface treatment, filler, anti-static agent, corrosion inhibitor, viscosity adjustor, hardener, joint-less floor, moulding compound, stopping material, primer, casting material, cement	Aliphatic amines and halogenated derivatives thereof
241.	Methenamine	612-101-00-2	202-905-8	100-97-0													7	7		additive, hardener	Aliphatic amines and halogenated derivatives thereof
242.	2-piperazin-1-ylethylamine	612-105-00-4	205-411-0	140-31-8													7	7		curing agent, intermediate, adhesive, process regulator, filler, flux agent, fuel additive, insulating material, reagent, viscosity adjustor, construction material, paints, corrosion inhibitor, hardener, curing agent	Aliphatic amines and halogenated derivatives thereof
243.	Amines, polyethylenepoly-	612-121-00-1	268-626-9	68131-73-7													7	7		paints, adhesive, construction material, intermediate, cleaner, additive	Aliphatic amines and halogenated derivatives thereof
244.	2,4,6-trichloro-1,3,5-triazine	613-009-00-5	203-614-9	108-77-0													7	7		pesticide, water treatment	Aliphatic amines and halogenated derivatives thereof
245.	Propylamine		203-462-3	107-10-8													7	7		intermediate, reagent, colouring agent, corrosion inhibitor, pharma, process regulator, solvent	Aliphatic amines and halogenated derivatives thereof
246.	trientine	612-059-00-5	203-950-6	112-24-3													7	7		pharma, intermediate, construction material, paints, process regulator, viscosity adjustor, adhesive, solvent, filler, surface treatment, corrosion inhibitor, flux agent, heat transferring agent, hardener, curing agent, protective chemical, dyeing auxiliary, dispersion agent, casting material, putty compound	Aliphatic amines and halogenated derivatives thereof
247.	3,6,9,12-tetraazatetradecamethylenediamine	612-064-00-2	223-775-9	4067-16-7													7	7		process regulator, construction material, paints, filler, adhesive, joint-less floors, curing agent, hardener, intermediate	Aliphatic amines and halogenated derivatives thereof
248.	perhydro-1,3,5-trinitro-1,3,5-triazine		204-500-1	121-82-4												7		7		explosive	Aliphatic nitrated derivatives

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
249. delta 3 carene		236-719-3	13466-78-9													7	7		cleaner, surface treatment, intermediate, pharma, odour agent, absorbent, polishing agent, activator, degreasers, solvent	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
250. 1,4-bis(2,3-epoxypropoxy) butane	603-072-00-7	219-371-7	2425-79-8													7	7		diluent, flexibilizer, adhesive, construction material, paints, filler, surface treatment, cleaner, casting material, hardener	Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
251. phthalic anhydride	607-009-00-4	201-607-5	85-44-9													7	7		curing agent, rubber retarder, scorch inhibitor, plasticizer, hardener, intermediate, pesticide, reagent, softener, tanning agent, light- and heat-stabilizer, construction material, paints, adhesive, corrosion inhibitor, impregnation material, colouring agent, surface treatment, reprographic agent, vulcanizing agent, filler, preservative, stopping material, binder	Aromatic acids - aromatic anhydrides or their halogenated derivatives
252. benzene-1,2,4-tricarboxylic acid 1,2-anhydride	607-097-00-4	209-008-0	552-30-7													7	7		plasticizer, curing agent, resin, intermediate, paints	Aromatic acids - aromatic anhydrides or their halogenated derivatives
253. tetrahydrophthalic anhydrides	607-240-00-0 / 607-099-00-5 / 607-241-00-6	251-823-9 / 234-290-7 / 201-605-4 / 243-072-0	34090-76-1 / 11070-44-3 / 85-43-8 / 19438-60-9													7	7		adhesive, viscosity adjustor, paints, heat transferring agent, process regulator, curing agent, manufacture of basic metal, electrical machinery and apparatus and other transport equipment, intermediate, anti-scorching agent, filler, stopping material	Aromatic acids - aromatic anhydrides or their halogenated derivatives
254. Melamine		203-615-4	108-78-1											7		0	7		flame retardant, adhesive, cutting fluid	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
255. p-phenylenediamine	612-028-00-6	203-404-7	106-50-3													7	7		stabilizer	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
256. pyridine	613-002-00-7	203-809-9	110-86-1												7		7		solvent, pesticide	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated or sulfonated derivatives thereof
257. xylene	601-022-00-9	202-422-2 / 203-396-5 / 203-576-3 / 215-535-7	95-47-6 / 106-42-3 / 108-38-3 / 1330-20-7												7		7		degreaser, pesticide, solvent, cleaner	Benzene or counterparts thereof
258. cumene	601-024-00-X	202-704-5	98-82-8												7		7		solvent, cleaner	Benzene or counterparts thereof
259. Vinyltoluene		246-562-2	25013-15-4												7		7		reactive diluent, resin modifier, paints, adhesive, construction material, corrosion inhibitor, primer	Benzene or counterparts thereof (the counterparts of benzene are defined by the formula: CnH2n-6)
260. Aluminium	013-002-00-1	231-072-3	7429-90-5												7		7		additive, deoxidant	Broncho-pulmonary ailments caused by dusts or fumes from aluminium or compounds thereof
261. Butan-1-ol	603-004-00-6	200-751-6	71-36-3												7		7		solvent	Butyl alcohol
262. Carbazole		201-696-0	86-74-8											7			7		molding sand	Carbazole or compounds thereof
263. Alkanes, C3-9	601-003-00-5 / 601-009-00-8	200-827-9 / 203-892-1 / 203-913-4	74-98-6 / 111-65-9 / 111-84-2												7		7		solvent, catalyst, fuel, degreaser	Crude paraffin + Aliphatic or alicyclic hydrocarbons derived from petroleum spirit or petrol
264. hydrogen cyanide & its alkaline salts	006-006-00-X / 006-007-00-5	200-821-6 / 205-792-3 / 205-599-4	74-90-8 / 151-50-8 / 143-33-9												7		7		pesticide, electroplating agent, hardener, reagent, cleaner, extracting agent, intermediate, depressant, dye, chelating or sequestering agent, heat-treating agent, stripping agent, warfare agent	Cyanides and compounds thereof
265. 1-methoxypropan-2-ol	603-064-00-3	203-539-1	107-98-2												7		7		solvent, cleaner	Encephalopathies or polyneuropathies due to organic solvents
266. but-2-yne-1,4-diol	603-076-00-9	203-788-6	110-65-6													7	7		solvent	Encephalopathies or polyneuropathies due to organic solvents
267. 2,3,5-trimethylhydroquinone	604-045-00-2	211-838-3	700-13-0													7	7		construction material, filler, adhesive, stopping material	Encephalopathies or polyneuropathies due to organic solvents
268. 2-(morpholinothio) benzothiazole	613-113-00-0	203-052-4	102-77-2													7	7		vulcanization accelerator, adhesive, process regulator	Encephalopathies or polyneuropathies due to organic solvents

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
269. Bis(2-ethylhexyl) adipate		203-090-1	103-23-1											7			7		plasticizer, solvent, aircraft lubes, hydraulic fluid, softener, lubricant, additive, filler, adhesive, construction material, reprographic agent, paints, moulding compound, joint-less floors, hardener, transmission agent, medium caulking compound	Encephalopathies or polyneuropathies due to organic solvents
270. Dicyclohexyl phthalate		201-545-9	84-61-7											7			7		plasticizer, heat sealer, modifier, finishing agent, process regulator, adhesive, reprographic agent, filler, hardener, inks, curing agent, stopping material	Encephalopathies or polyneuropathies due to organic solvents
271. diethyl phthalate		201-550-6	84-66-2											7			7		solvent, denaturing agent, intermediate, plasticizer, pesticide, dispersing medium, dye carrier, softener, odour agent, cleaner, absorbent, cosmetics, surface treatment, pharma, welding agent	Encephalopathies or polyneuropathies due to organic solvents
272. cyclohexanol	603-009-00-3	203-630-6	108-93-0												7		7		solvent	Encephalopathies or polyneuropathies due to organic solvents
273. 2-chloroethanol	603-028-00-7	203-459-7	107-07-3												7		7		solvent	Encephalopathies or polyneuropathies due to organic solvents
274. 2-diethylaminoethanol	603-048-00-6	202-845-2	100-37-8												7		7		solvent	Encephalopathies or polyneuropathies due to organic solvents
275. 2-(2-butoxyethoxy)ethanol	603-096-00-8	203-961-6	112-34-5												7		7		solvent, pesticide, cleaner	Encephalopathies or polyneuropathies due to organic solvents
276. acrylaldehyde	605-008-00-3	203-453-4	107-02-8												7		7		pesticide, solvent	Encephalopathies or polyneuropathies due to organic solvents
277. peroxodisulphates	016-060-00-6	231-786-5 / 231-781-8	7727-54-0 / 7727-21-1														7	7	process regulator, paints, adhesive, filler, surface treatment, bleaching agent, reagent, oxidizer, cleaner, pesticide, primer, polishing agent, intermediate, cosmetics, catalyst, protective chemical, pharma, polymerization promoter, starch modifier, flour-maturing agent, desizing of textiles, reducing agent	Esters or their halogenated derivatives
278. sodium hydrogen glutamate		205-538-1	142-47-2												7		7		flavoring agent, pharma, additive, aroma booster	Esters or their halogenated derivatives

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
279. potassium permanganate	025-002-00-9	231-760-3	7722-64-7												7		7		pesticide, bleaching agent, dye, washing agent, tanning agent, purifier, disinfecter, reagent, anti-infective, antiseptic, astringent, deodorant, purifier, descaling and desmutting agent, sanitizer, disinfectant, destainer	Esters or their halogenated derivatives
280. diallyl phthalate	607-086-00-4	205-016-3	131-17-9											7			7		electronic equipment, insulators, potentiometers, circuit boards, diluent, dye carrier, sealant, impregnant, plasticizer, stabilizer, cross linking agent, surface treatment, solvent, paints	Esters or their halogenated derivatives not referred to under heading 1.122 of Annex I
281. O-(6-chloro-3-phenylpyridazin-4-yl) S-octyl thiocarbonate	607-232-00-7	259-686-7	55512-33-9													7	7		food agent, pesticide, corrosion inhibitor, textile auxiliar	Esters or their halogenated derivatives not referred to under heading 1.122 of Annex I
282. 2-(2-butoxyethoxy) ethyl 6-propylpiperonyl ether		200-076-7	51-03-6										7				7		pesticide, food agent, intermediate, pharma	Esters or their halogenated derivatives not referred to under heading 1.120 of Annex I
283. dimethoxymethane		203-714-2	109-87-5												7		7		solvent, intermediate, cleaner, lubricant, additive, corrosion inhibitor, antiadhesive agent, pharma, paints, insulating material, base oils, degreasers, activator, reagent, stripper	Esters or their halogenated derivatives not referred to under heading 1.120 of Annex I
284. Oxirane, mono [(C12-14-alkyloxy)methyl] derivs.	603-103-00-4	271-846-8	68609-97-2													7	7		construction material, adhesive,paints, filler, surface treatment, anti-static agent, intermediate, reagent, reprographic agent, solvent, viscosity adjustor, moulding compound, joint-less floor, casting material, curing agent, binder, hardener, dispersion agent	Esters or their halogenated derivatives not referred to under heading 1.120 of Annex I
285. Ethane-1,2-diol	603-027-00-1	203-473-3	107-21-1												7		7		antifreeze, adhesive, adjuvant, varnish, solvent, cleaner	Ethylene glycol
286. trichlorofluoromethane		200-892-3	75-69-4												7		7		solvent, catalyst, pesticide	Fluorine or compounds thereof + Halogenated derivatives of the aliphatic or alicyclic hydrocarbons
287. hydrogen sulphide	016-001-00-4	231-977-3	7783-06-4												7		7		cutting fluid	Hydrogen sulphide

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
288.	iodine	053-001-00-3	231-442-4	7553-56-2											7			7		pesticide, pharma, catalyst, reagent, disinfectant, intermediate	Iodine
289.	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	615-008-00-5	223-861-6	4098-71-9													7	7		process regulator, construction material, paints, adhesive,filler, reprographic agent, surface treatment, intermediate, hardener, joint-less floor, curing agent, inks, dispersion agent, primer	Isocyanates
290.	methyl isothiocyanate	615-002-00-2	209-132-5	556-61-6													7	7		pesticide, cutting fluid	Isocyanates
291.	Propan-2-ol	603-117-00-0	200-661-7	67-63-0												7		7		lubricant, solvent, disinfectant, pesticide, degreaser, cleaner, coating	isopropyl alcohol
292.	benzophenone		204-337-6	119-61-9											7			7		fixative agent, flavoring agent, polymerization inhibitor, paints, cosmetics, intermediate, photoinitiator, fragrance enhancer, curing agent, additive, reprographic agent, cleaner, surface treatment, process regulator, filler, solvent, activator, colouring agent, polishing agent, catalyst, primer	Ketones or their halogenated derivatives
293.	1,2,3,5,6,7-hexahydro-1,1,2,3,3-pentamethyl-4H-inden-4-one		251-649-3	33704-61-9											7			7		cleaner, odour agent	Ketones or their halogenated derivatives not referred to under heading 1.121 of Annex I
294.	Pentan-3-one	606-006-00-5	202-490-3	96-22-0												7		7		solvent	Ketones or their halogenated derivatives not referred to under heading 1.121 of Annex I
295.	Triadimefon	606-037-00-4	256-103-8	43121-43-3													7	7		food agent, pesticide	Ketones or their halogenated derivatives not referred to under heading 1.121 of Annex I
296.	butanone oxime	606-082-00-X	202-496-6	96-29-7													7	7		pesticide, paints, solvent, viscosity adjustor, buffer, reducing agent, stabilizer, impregnation material, corrosion inhibitor, surface treatment, filler, colouring agent, fuel additive, insulating material, cleaner, preservative, tightening material, anti-siccative, dryer, enamel, antiskinning agent, caulking compound, catalyst, protective chemical	Ketones or their halogenated derivatives not referred to under heading 1.121 of Annex I

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
297. 1,2-benzisothiazol-3(2H)-one	613-088-00-6	220-120-9	2634-33-5													7	7		pesticide, solvent, paints, adhesive, cleaner, filler, colouring agent, softener, surface-active agent, cutting fluid, construction material, process regulator, impregnation material, absorbent, viscosity adjustor, antiadhesive agent, corrosion inhibitor, photochemical, anticondensation agent, fixing agent, odour agent, reprographic agent, softener, complexing agent, rinsing agent, polishing agent, cooling agent, adhesive hardener	Ketones or their halogenated derivatives not referred to under heading 1.121 of Annex I
298. manganese & its compounds	025-001-00-3 / 025-003-00-4	231-105-1 / 215-202-6 / 215-695-8 / 232-089-9	7439-96-5 / 1313-13-9 / 1344-43-0 / 7785-87-7												7		7		fertilizer, disinfectant, bleaching agent, reagent, drier for oils, oxidizer, decolorizer, alloying agent, desulfurizing agent, deoxidizer, intermediate, welding agent, corrosion inhibitor, paints, adhesive, surface treatment, filler, cooling agent, cleaner, process regulator, construction material, adhesive, colouring agent, conductive agent, pharma, electric and electromechanical component, tightening material, flooring material, curing agent, pesticide, primer, stopping material, hardener, additive, ceramic material, catalyst, impregnation material, cement ceramic material, precipitant, dyer, boiling oil, food agent	Manganese or compounds thereof
299. methanol	603-001-00-X	200-659-6	67-56-1												7		7		disinfectant, degreaser, stripper, preservative, pesticide, adjuvant, solvent, cleaner	methyl alcohol
300. Butanone	606-002-00-3	201-159-0	78-93-3												7		7		degreaser, solvent, cleaner	methyl ethyl ketone
301. Turpentine, oil	650-002-00-6	232-350-7	8006-64-2													7	7		coating agent, cleaner, degreaser, pesticide, adjuvant, solvent	Mineral and other oils
302. Tall-oil rosin	650-015-00-7	232-484-6 / 232-475-7	8052-10-6 / 8050-09-7													7	7		adjuvant, adhesive, pesticide, paints, welding agent, colouring agent, filler, surface treatment, corrosion inhibitor, cleaner, impregnation material, flux agent, intermediate, solvent, viscosity adjustor, reprographic agent, polishing agent, tightening material, lubricant, pharma, additive, dispersion agent, hardener	Mineral and other oils
303. sodium 3-nitrobenzenesulphonate	609-048-00-2	204-857-3	127-68-4													7	7		additive, oxidant	Nitrated derivatives of aromatic hydrocarbons

Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
304. heptanoic acid	607-196-00-2	203-838-7	111-14-8												7		7		flavoring agent, intermediate, of non-metallic mineral products, manufacture of radio, television and communication equipment	Organic acids
305. sulphanilic acid	612-014-00-X	204-482-5	121-57-3													7	7		reagent, intermediate, construction material	Organic acids
306. maleic acid	607-095-00-3	203-742-5	110-16-7													7	7		cleaner, adhesive, filler, surface-active agent, paints, reagent, buffer, pharma, filler, photochemical, impregnation material, pesticide, intermediate, tightening material, primer, disinfectant, sealer, resin, hardener	Organic acids
307. triphenyl phosphate		204-112-2	115-86-6												7		7		flame retardant	Organophosphorus esters
308. triisobutyl phosphate		204-798-3	126-71-6													7	7		colouring agent, surface-active agent, cleaner, paints, fuels, polishing agent, textile auxiliar, antifoaming agent, absorbent, dispersion agent, degreaser	Organophosphorus esters
309. dinitrogen oxide		233-032-0	10024-97-2												7		7		reagent, pharma, lubricant, additive, additive, indicator, oxidizer, propellant	Oxides of nitrogen
310. Clorofene		204-385-8	120-32-1													7	7		pesticide, enhancing agent, disinfectant, preservative	Phenols or counterparts or halogenated derivatives thereof
311. tungsten		231-143-9	7440-33-7												7		7		Increment hardness, toughness, elasticity and tensile strength of steel, electric equipment, welding agent, filler, corrosion inhibitor, food agent, intermediate, reagent	Pulmonary fibroses due to metals
312. tin		231-141-8	7440-31-5												7		7		abrasive	Respiratory ailments caused by the inhalation of dust from tin
313. benzothiazole-2-thiol	612-108-00-3	205-736-8	149-30-4													7	7		pesticide, accelerator, corrosion inhibitor, additive	Thioalcohols
314. alfa-hexylcinnamaldehyde		202-983-3	101-86-0													7	7		pesticide, flavor, fragrance, intermediate	
315. Hexahydro-1,3,5-Trimethyl-S-Triazine		203-612-8	108-74-7											7			7		pesticide, process regulator	
316. methylhydrazine		200-471-4	60-34-4													7	7		solvent, pharma, intermediate	
317. disulfiram	006-079-00-8	202-607-8	97-77-8													7	7		rubber accelerator, vulcanizer, disinfectant, pesticide, pharma, process regulator, reagent	
318. tetramethylthiuram	006-080-00-3	202-605-7	97-74-5													7	7		vulcanisation accelerator, booster, adhesive, process regulator, intermediate	

	Name	Annex VI CLP	EC No	CAS	C1	IARC 1, 2A	M1	R1	ED1	C2	IARC 2B	M2	R2	PBT	ED2	n	s	TOTAL score	Other Lists	Uses	Occupational disease
319.	sodium azide	011-004-00-7	247-852-1	26628-22-8												7		7		pesticide, intermediate stabilizer, reagent, preservative, propellant, retarder, preventer of coagulation, decomposer	
320.	2-phenylpropene	601-027-00-6	202-705-0	98-83-9												7		7		intermediate, diluent, degradation inhibitor, adhesive, paints, construction material, filler, surface-active agent, reprographic agent, colouring agent, solvent, impregnation material, corrosion inhibitor	
321.	1,3,4,6,7,8 -hexahydro-4,6,6, [5,6-c]pyran	603-212-00-7	214-946-9	1222-05-5											7			7		detergent, fragrance, cosmetics, cleaner, surface treatment, pesticide, absorbent, aerosol propellant, polishing agent, cleaner, repellents and attractant	
322.	citral	605-019-00-3	226-394-6	5392-40-5													7	7		pesticide, condiment, gelatin, intermediate, flavor, acidulant	
323.	glutaral	605-022-00-X	203-856-5	111-30-8													7	7		disinfectant, pesticide, preservative, cleaner	
324.	cyclohexane-1,2- dicarboxylic anhydride	607-102-00-X	201-604-9	85-42-7													7	7		process regulator, paints, adhesive, colouring agent, viscosity adjustor, heat transferring agent, curing agent, hardener	
325.	epsilon-caprolactam	613-069-00-2	203-313-2	105-60-2												7		7		solvent, intermediate, adhesive, colouring agent, paints, surface treatment, absorbent, construction material, flame retardant, reprographic agent, photochemical, process regulator	
326.	di(benzothiazol-2-yl) disulphide	613-135-00-0	204-424-9	120-78-5													7	7		pesticide, accelerator, retarder	
327.	N-cyclohexylbenzothiazole- 2-sulfenamide	613-136-00-6	202-411-2	95-33-0													7	7		accelerator for rubber, vulcanization adhesive, intermediate, fertilizer, colouring agent	
328.	cyanamide	615-013-00-2	206-992-3	420-04-2													7	7		pesticide, intermediate, additive, preservative	
329.	dichlofluanid	616-006-00-7	214-118-7	1085-98-9													7	7		pesticide, paints, impregnation material, wood preservative	
330.	tosylchloramide sodium	616-010-00-9	204-854-7	127-65-1													7	7		cleaner, pesticide, conductive agent, preservative, disinfectant, pharma, cosmetic	
331.	phenmedipham	616-106-00-0	237-199-0	13684-63-4												7		7		food agent, pesticide	
332.	dibenzoyl peroxide	617-008-00-0	202-327-6	94-36-0													7	7		paints, catalyst, pesticide, additive	
333.	Subtilisin	647-012-00-8	232-752-2	9014-01-1													7	7		cleaner, food agent, process regulator, softener, pesticide, surface-active agent, catalyst, spot (stain) remover, detergent, disinfectant, reagent, pharma	
334.	Amylase, gluco-	647-016-00-X	232-877-2	9032-08-0													7	7		process regulator, food agent, catalyst	

Annex II: Acronyms

C1:	Carcinogen Categories 1A & 1B
C2:	Carcinogen Category 2
CAREX:	International Information System on Occupational Exposure to Carcinogens
ChemSec:	Chemical Secretariat
CLP:	Classification, Labelling and Packaging Regulation
CMR:	Carcinogen, Mutagen and Reprotoxic
COM:	European Commission
ECB:	European Chemicals Bureau
ECHA:	European Chemicals Agency
EDC:	Endocrine Disrupting Chemical
ESIS:	European chemical Substances Information System
ETUC:	European Trade Union Confederation
EU:	European Union
EURAM:	European Union Risk Ranking Method
HPVC:	High Production Volume Chemical
HSDB:	Hazardous Substances Data Bank
IARC:	International Agency for Research of Cancer
IARC 1:	human carcinogen according to IARC criteria
IARC 2A:	probable human carcinogen according to IARC criteria
IARC 2B:	possible human carcinogen according to IARC criteria
ISTAS:	Instituto Sindical de Trabajo, Ambiente y Salud
IUCLID:	International Uniform Chemical Information Database
M1:	Mutagen categories 1A & 1B
M2:	Mutagen category 2
MS:	Member State

OECD:	Organisation for Economic Co-operation and Development
OSPAR:	Convention for the Protection of the Marine Environment of the North-East Atlantic
PBT:	Persistent, Bioaccumulative and Toxic
POP:	Persistent Organic Pollutant
R1:	Reprotoxicant categories 1A & 1B
R2:	Reprotoxicant category 2
REACH:	Registration, Evaluation, Authorisation and restriction of Chemicals
RCF:	Refractory Ceramic Fibres
RoI:	Registry of Intentions
SIEF:	Substance Information Exchange Forum
SVHC:	Substances of Very High Concern
TU:	Trade Union
vPvB:	very Persistent, very Bioaccumulative



European Trade Union Confederation

The European Trade Union Confederation currently comprises 81 member organisations, from a total of 36 countries in Western, Central and Eastern Europe, and 12 industry federations. All in all, the ETUC represents the interests of 60 million workers at European level.



ETUC 5 bd du Roi Albert II
B-1210 BRUSSELS
Tel.: +32-(0)2-224 04 11 Fax: +32-(0)2-224 04 54/55
www.etuc.org

European Trade Union Institute

The Health and Safety Department of the European Trade Union Institute (ETUI) supports the European Trade Union Confederation and its member organizations with expertise and research in occupational health. It has set up an Observatory on the application of the European Directives and runs a network of trade union experts on technical standardization (ergonomics, safety of machinery) and dangerous substances.



ETUI 5 bd du Roi Albert II
B-1210 BRUSSELS
Tel. : +32-(0)2 224 05 60 Fax : +32-(0)2 224 05 61
<http://hesa.etui.org>

ISTAS (Union Institute of Work, Environment and Health)

Is a self-managed trade union's technical foundation supported by the Spanish Trade Union Confederation CCOO to promote the improvement of working conditions, occupational health and safety and environmental protection in Spain.



ISTAS
C/ Ramón Gordillo, 7-1ª E - 46010 VALENCIA
Tel: +34 96 391 14 21 Fax: +34 96 391 72 64
c/ General Cabrera, 21 E - 28020 MADRID
Tel: +34 91 449 10 40 Fax: +34 91 570 10 16
www.istas.ccoo.es
