



## Global Automotive Declarable Substance List (GADSL)

### 1. GADSL Objectives

Major objectives of automotive product development include continuous improvements in quality, safety, and the reduction of environmental impact throughout vehicle life cycle. As much as possible, these objectives should be achieved in an efficient, cost effective way to optimize consumer value. A large number of construction, operational and processing materials are used in the automotive manufacturing chain, and their selection and proper use can have significant impact on these objectives.

To meet these objectives, an ongoing dialogue and information flow within the global automotive supply chain, including automobile manufacturers, tier suppliers and material suppliers has been established, called the Global Automotive Stakeholder Group (GASG). Early information and dialogue up and down the supply chain will help facilitate compliance with current and future regulations, as well as take into account customer requirements to ensure sustainable products. Optimized handling of relevant information flow can help automobile manufacturers meet existing and projected reporting requirements in a consistent, understandable and efficient way.

The GASG organization consists of three regions, Americas, Europe/Africa/Middle East, and Asia/Pacific. Regional membership and participation is open to all stakeholders in the automotive supply chain. Each of the three regions nominates six members to sit on the governing body of the GASG, called the Steering Committee (SC). The SC meets annually or more at its prerogative to decide on the GADSL and to provide a transparent and open process for decision making.

The product of the GASG dialogue is the Global Automotive Declarable Substance List (GADSL). The GADSL covers declaration of certain information about substances relevant to parts and materials supplied by the supply chain to automobile manufacturers. The information is applicable to the use of these parts or materials in the production of a vehicle up to its usage and relevant to the vehicle's re-use or waste disposal.

Revision Date	Revision Comment
2005-01-25	First Release
2006-01-10	Clarification of the term OEM and how to use GADSL.
2007-01-17	Added clause regarding use of GADSL and clarification of what a reportable substance is. Update of the substance list according to agreed dossiers. Changes are highlighted in gray.

The intent of GADSL is to become the company specific list for declaration of parts composition within the automotive industry. It provides a definitive list of substances requiring declaration with the target to minimize individual requirements and ensure cost-effective management of declaration practice along the complex supply chain. The scope is to cover declarable substances in the flow of information relevant to parts and materials supplied throughout the automotive value chain, from production to the end of life phase. **The GADSL only covers substances that are expected to be present in a material or part that remains in the vehicle or part at point of sale.**

This approach is a voluntary industry initiative designed to ensure integrated, responsible and sustainable product development by automobile manufacturers and their supply chain. Its purpose is to minimize individual requirements and ensure cost-effective management of declaration practice along the large and complex global supply chain.

## 2. Application of the GADSL

The use of certain substances in vehicle parts may be a risk factor to human health and the environment. Information exchange along the vehicle supply chain helps manage those potential risks while also meeting customer requirements. The GADSL is used to enhance further dialogue and cooperation along the supply chain on the benefits and potential risks of certain substances or groups of substances in a specified use within vehicle parts/materials. Declaration of a substance does not mean, however, that the substance is prohibited from being used in vehicle parts or is to be de-selected from use. Any declaration process using the GADSL must respect the framework formulated in this preface.

### Definitions

Substances	Chemical elements or chemical compounds as parts of materials or preparations
Preparations	Mixtures, composed of two or more substances
Materials	Chemical elements, chemical compounds or preparations thereof in finished state used to manufacture products/articles
Products/articles	Materials, which have been transformed during production to take a specific shape, surface or form, which has a greater influence on their function than their chemical composition does.
Parts	Single components made up of one or more homogenous material(s)

## Criteria for Declarable Substances

The decision to list a substance on the GADSL is based on the following criteria:

- The substance should be expected to be present in a material or part in the vehicle. Either of the following conditions should apply:
  - The substance is regulated<sup>1</sup>, or is projected to be regulated by a governmental agency or authority, or
  - It is demonstrated, by testing under OECD (Organization for Economic Cooperation & Development) guidelines for testing chemicals, conducted under Good Laboratory Practice (according to the OECD Principles on Good Laboratory Practice as revised in 1997), that the substance may be associated with a significant hazard to human health and/or the environment, and its presence in a material or part in a vehicle may create a significant risk to human health and/or the environment. Other scientifically valid methodology, based on the weight of evidence, may also be considered.
- A substance that causes a functional problem in vehicle design may be included if its presence in a vehicle part exceeds a level shown to be problematic by an international industry standard test<sup>2</sup>.
- Reportable threshold levels will be based on the lowest level required by regulation or reasonably required by scientific evaluation.

## Declarable Substance Classification

A reportable substance when present in a material or part in a vehicle will be shown on the GADSL with a classification of “P” or “D”, defined as follows:

Depending on its specific application, the same substance could be classified “P” in one end use, and “D” in another end use. When this is the case, both classifications for the substance will be shown on the GADSL with examples under the application column.

Declaration thresholds are defined by specific application of the substance in automotive parts. Any reportable substance below the declaration level does not have to be reported. These levels, unless otherwise indicated, are 0.1 g/100g (weight %) of non-separable, homogeneous materials, not on the total content in the component or assembly.

### **P = Prohibited**

A substance designated “P” is either prohibited by regulation for use in certain applications or may not exceed regulated threshold limits.

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<sup>1</sup> Due to potential effects on human health or the environment related to the Automotive industry

<sup>2</sup> Examples would be emissions, like odor testing or fogging. Currently there are numerous tests. Development of a quantitative industry standard test would reduce resource requirement and uncertainty for the supply chain.

## **D = Declarable**

A substance designated "D" must be declared if it exceeds the defined threshold limits.

## **Reason Codes**

Reason codes have been developed to explain why a substance has been included in the GADSL. Each declarable substance will be listed with one of the following reason codes to facilitate dialog within the supply chain:

### **LR = Legally Regulated**

A substance legally regulated because its use in a vehicle part or material poses a significant risk to health and or the environment.

### **FA = For Assessment**

A substance projected to be regulated by government agencies, upon decision by the GASG Steering Committee.

### **FI = For Information**

A substance tracked for information purposes only, upon decision by the GASG Steering Committee. After discussion at the GASG Steering Committee and on **an exceptional basis**, an automobile manufacturer may include an individual substance or family of substances on the list under this (FI) reason code.

LR, FA and FI substances should not be construed to mean that the substance is prohibited from being used in a vehicle part, or is to be de-selected from use.

Substance families: If all members of a substance family are "D" or "P" the entry "substance and their compounds" is listed. The entry "substance, selected" means: This substance family refers to a limited list of single substances, which meet the criteria for being declarable or prohibited.

In two cases substance families have the classification "D, except". This means that all substances within that family are declarable except those that are listed directly below labeled with "P" (e.g. Polybrominated Diphenyl Ethers).

CAS numbers for individual substances of a chemical family or group on the GADSL are listed in the Reference List which is part of GADSL. This list is available on the GADSL website. A 2006 priority of the GASG will be to review individual substances identified by CAS numbers on the reference list against GADSL criteria. The sole purpose of this reference list is to facilitate communication and declaration relating to the GADSL within the automotive supply chain to the automobile manufacturers.

### **3. GADSL Validity**

The valid GADSL will be the current English version on <http://www.gadsl.org>. The content of the GADSL and its application does not relieve parties in the supply chain from obligation to comply with all existing relevant regional and national regulations in their business to business dealings.

### **4. Change Management Process**

The GADSL will be updated and published annually in February according to improved knowledge in order to achieve a high standard of product safety and environment protection. At the latest 12 months after the publication date, any declaration should be performed according to this updated version.

Requested changes to the GADSL must be received by July 15 each year in order to be considered for the next version. For this input, comments and questions please contact one of the persons listed on the GADSL website.

### **5. Listed substances**

The table on the following pages shows the substances that are covered by the GADSL. Any substance name that has a "\*" next to it is to be considered as a group name covering several individual substances. Every attempt has been made to include a complete list of the members of the family. For a listing of those potentially individual relevant substances, please refer to the "Reference List" that can be found on the GADSL website.

Any substance name that has a "(" next to it and where the substance name is followed by the word "selected" means that the list in the reference list will not be a complete listing but will show only those members that are to be reported, whether they are classified as "P" or "D."

### **6. Use of GADSL**

GADSL was created by GASG. GADSL is intended to be a public document, freely available to third parties. GADSL may be duplicated or reproduced without the express permission of GASG. Companies and trade associations along the automotive value chain are free to communicate GADSL and any updates thereto. GASG and its members assume no liability whatsoever for GADSL, its content or any reliance on GADSL. Please note that this document is constantly evolving and is updated every year in February.

## 7. Abbreviations Used

- EU-D European Union Directive including amendment and adaptation directives:  
*EU-D 67/548/EEC*: Directive on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of preparations made from dangerous substances  
*EU-D 76/769/EEC*: Directive on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations  
*EU-D 2000/53/EC*: Directive on end-of life vehicles
- EU-R EU Regulation including amendment and adaptation regulations:  
*EU-R 594/91/EEC*: Council Regulation on substances that cause the depletion of the ozone layer
- US-EPA US-EPA Regulations on Class 1 and Class 2 Ozone Depleting Substances (ODS) Under section 602 of the *Clean Air Act*, published on January 19, 1996 in the U.S. Federal Register

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
1	<b>Acetaldehyde</b>	75-07-0	D	FI		EU-D 67/548/EEC	Emitted substance from polymer components	
2	<b>Acetamide</b>	60-35-5	D	FI		EU-D 67/548/EEC	Solvent additive, stabilizer for softening agents	
3	<b>Acrylamide</b>	79-06-1	D	FI		EU-D 67/548/EEC	Production of polyacrylamide (residual monomer)	
4	<b>Acrylonitrile</b>	107-13-1	D	FI		EU-D 67/548/EEC	Production of plastics, resins and rubbers eg. ABS (residual monomer)	
5	<b>Amines, carcinogenic, which are formed from Azo-dyes, selected (*)</b>		P	LR		EU-D 2002/61/EC TRGS 614	In dyes for textiles etc.	30 ppm
6	<b>Amines, which can form carcinogenic Nitrosamines (*)</b>		D	FI		Legally regulated according to german TRGS 615. Limit for all secondary Amines in volatile corrosion inhibitors, which can form carcinogenic Nitrosamines. Volatile corrosion inhibitors include papers, plastic films and oils.	Polyurethane foams, corrosion inhibitors, lubricants, rubber, colourants, herbicides	
7	<b>4-Aminobiphenyl and its salts (*)</b>		P	LR		EU-D 67/548/EEC EU-D 76/769/EEC		0,01%
8	<b>Ammonium Perchlorate</b>	7790-98-9	D	FI		Pyrotechnical compound	Pyrotechnical compound	

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
9	<b>Aniline and its salts (*)</b>		D	FI		EU-D 67/548/EEC	Pigments, sulfonamides, isocyanate - plastics	
10	<b>Antimonytrioxide (Diantimonytrioxide)</b>	1309-64-4	D	FI		EU-D 67/548/EEC	Flame retardant	
11	<b>Aromatic amines, selected (*)</b>		D	FI			Possible impurities in certain colours for natural textiles (production prohibited in Europe)	0,1%
12	<b>Arsenic and its compounds (*)</b>		D	FA		EU-D 67/548/EEC EU-D 76/769/EEC	Paints, smelted materials, biocides (including wood treatment), leather and textile finishes, glasses, pyrotechnic objects, metal finishes, electronics	0.01% (unless present in metals & alloys, then the declaration limit is 0,05%).
13	<b>Asbestos Fibres (*)</b>		P	LR		EU-D 76/769/EEC,	Friction pads, gaskets, insulations	Any intentionally added content
14	<b>Asbestos Minerals (*)</b>		D	FI		Potential to form Asbestos fibres (see entry Asbestos fibres)	Any mineral that has the potential to form Asbestos Fibres	Any intentionally added content
15	<b>Barium compounds (organic or water soluble) (*)</b>		D	FI		EU-D 67/548/EEC	Colour pigments, stabilizers for PVC, lubricant additives	1%

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
16	<b>Benzidine and its salts (*)</b>		P	LR		EU-D 67/548/EEC EU-D 76/769/EEC		0,01%
17	<b>Benzene</b>	71-43-2	P	LR	All applications except those listed below	EU-D 76/769/EEC	Fuel constituent, raw material/contaminant in other chemicals	0,01%
			D	FA	Additive in Fuels			0,1%
18	<b>Beryllium and its compounds (*)</b>		D	FI		EU-D 67/548/EEC	Electric contacts, relays and switches; electronics	
19	<b>Biocidal coatings / biocidal additives (*)</b>		D	FA		EU-D 2032/2002/EEC	Biocidal and biostatic treatments of polymers, textiles, and other components susceptible to microbiological attack (e.g. mobile air conditioning systems)	Any intentionally added content

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
20	<b>Butadiene , 1,3-</b>	106-99-0	D	FI		EU-D 67/548/EEC	Manufacturing of synthetic rubber for tyres, as homopolymerisate (BR), as copolymerisate with Styrene (SBR) or Acrylonitrile (NR), starting product of Sulfolane, Chloroprene, Hexadamine, softeners, Tetrahydrophthalic acid anhydride, residual monomer in ABS	
21	<b>Cadmium and its compounds (*)</b>		P	LR	All applications except those listed below.	EU-D 2000/53/EEC EU-D 67/548/EEC EU-D 76/769/EEC	Surface protection of metals, stabilizers in polymers, pigments, in paints and plastics, electronics	0,01%, Any intentionally added content must be reported.
21.1			D	LR	Batteries for electric vehicles.			
21.2			D	LR	Optical components in glass matrixes used for Driver Assistance Systems until July 1 2007			

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
21.3			D	LR	Maximum concentration by weight up to 0,01% per homogenous material			
22	<b>Chlorinated hydrocarbons (*)</b>		D, except	FA		EU-D 67/548/EEC	Leather, paints, rubbers, adhesives	
	1,1,1 Trichloroethane	71-55-6	P	LR		EU-D 94/60		
	Tetrachloromethane (Tetrachlorocarbon)	56-23-5	P	LR		Montreal Protocol		
23	<b>Chlorinated or Brominated Dioxins or Furans (*)</b>		P	LR		ChemVerbotsV	Impurities in products	Content above 10 ppb
24	<b>Chloroparaffines, unbranched (only SCCP and MCCP) (*)</b> <i>Note that the use of specific CAS numbers for these substances differs throughout the world. Example CAS numbers are provided below; however, other CAS numbers may be used that are not specific to chain length. Therefore, please consult your MSDS and supplier to determine product-specific chain length.</i>		D/P				Flame retarding substances	1%
	<b>Short Chained Chlorinated paraffines (SCCP)</b>		P	LR		EU-D 76/769/EEC		
	<b>Medium Chained Chlorinated paraffines (MCCP)</b>		D	FI		UK DEFRA		
25	<b>Chloroaniline</b>	106-47-8	D	FI		EU-D 67/548/EEC	Hardener or cross linking agent for polymers and epoxy resins	

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
26	<b>Chloro-fluoro-carbons (CFC) and other Ozone depleting substances (*)</b>		P	LR		EU-R 594/91/EEC, EPA ODP class 1	Coolants, propellants, cleaners, solvents, impregnating agents, blowing agents (PU production)	
27	<b>Chromium(VI)-salts (*)</b>		P	LR	All applications except those listed below.	EU-D 67/548/EEC EU-D 2000/53/EEC	Chromium pigments, chromated surfaces e.g. "Chromium Yellow", corrosion inhibitors, residues from dying and leather tanning.	0,1%, Any intentionally added content must be reported.
27.1			D	LR	Absorption refrigerators in motorcaravans			
27.2			D	LR	Corrosion preventive coatings until July 1, 2007.			
27.3			D	LR	Maximum concentration by weight up to 0,1% per homogenous material			

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
27.4			D	FA	Corrosion preventive coatings related to bolt and nut assemblies for chassis applications Until July 1 2008			
28	<b>Cobalt and its compounds (*)</b>		D	FI		EU-D 67/548/EEC	Hard metals, galvanic Zn-Co-plating, element in metals	
29	<b>Colophony (Rosin) (*)</b>		D	FI		ACGIH Worldwide - Documentation of the TLVs and BEIs with other Worldwide Occupational Exposure Values; 2003.	Solders, adhesives, sealants	
30	<b>Copper, metallic</b>	7440-50-8	D	FI	Dispersive applications (Brake and Friction linings)	SoC in dispersive friction material applications due to environmental impact potential	Alloys, Wiring, Friction linings, Electronics	
31	<b>Cyclododecane, hexabromo-(HBCD)</b>	25637-99-4	D	FI		EU risk assessment	Flame retardant	
32	<b>Diamino-diphenyl-methane (4,4 -Diaminodiphenylmethane)</b>	101-77-9	P	LR		EU-D 67/548/EEC	Preliminary and intermediate product of resins, adhesives, dyes, curing agent, accelerator.	

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
33	<b>Dichloropropanol (1,3-Dichloro-2-propanol)</b>	96-23-1	D	FI		EU-D 67/548/EEC	Solvent for anti-wrinkle agents and flame retardants in textiles, and in the production of epoxy resins	
34	<b>Dimethylformamide (N,N-Dimethylformamide)</b>	68-12-2	D	FI		1999/137/EC 91/689/EEC		
35	<b>Diorganotin compounds, Selected only (*)</b>		D	FI		EU-D 67/548/EEC	Stabilizer for polymers	
36	<b>Epichlorohydrin (1-Chloro-2,3-epoxy-propane)</b>	106-89-8	D	FI		EU-D 67/548/EEC	Residual monomers in epoxy resins	
37	<b>Ethanol, 2,2',2''-nitrilotris-(Triethanolamine)</b>	102-71-6	D	FI		Norway Bestillingsnr. 463 (Risk of N-nitroso compound formation in coolant admixtures)	Coolant component	
38	<b>Ethyl-/ Methyl-Glycols and their Acetates (*)</b>		D	FI		EU-D 67/548/EEC		
39	<b>Formaldehyde</b>	50-00-0	D	FI		EU-D 67/548/EEC	Residues and degradation products of plastics (aminoplasts, urea- and melamine resins, foam plastics, vulcanization accelerators, basis for synthetic tannins, biocides, adhesives, formed woods	Any intentionally added content of formaldehyde  Formaldehyde in any material, which is may be emitted under reasonable and foreseeable conditions, must be qualitatively indicated.  Impurities of formaldehyde above 0,1 % has to be declared.
40	<b>Halons (*)</b>		P	LR		EU-R 594/91/EEC	Fire extinguishers	

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
41	<b>Hexachlorocyclohexane</b>	58-89-9	D	FI		GefStoffV with Annex IV Nr. 5	Insecticide, substance in wood protecting compounds	
42	<b>Hydrazine</b>	302-01-2	D	FI		EU-D 67/548/EEC	Residual monomers in plastics, pigments and adhesives, antioxidants stabilizing of Amines, Phenols, in oils, greases, natural latex; blowing agents for foamed plastics	
43	<b>Hydrobromofluorocarbons; HBFC's (*)</b>		P	LR		Montreal Protocol; EU Regulation (EC Regulation 2037/2000); US EPA Class I ODS	Refrigerant	
44	<b>Hydrochlorofluorocarbons; HCFC's (*)</b>		P	FA	All applications except those listed below.	Montreal Protocol; EU Regulation (EC Regulation 2037/2000); US EPA Class II ODS	Refrigerant	
44.1			D	LR	servicing vehicles produced prior to December 2001 (where legally permitted)			
45	<b>Hydrofluorocarbons; HFC's (*)</b>		P	LR	All applications except those listed below	Kyoto Protocol	Refrigerant	

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
45.1			D	FA	All vehicle-related refrigerants			
46	<b>Lead and its compounds (*)</b>		P	LR	All applications except those listed below.	EU-D 2000/53/EEC EU-D 67/548/EEC	Lead as component in metals and alloys: e.g. bearing metals, steel, brass, aluminium processed in automated machines. Lead compounds, e.g. lead-containing stabilizers and pigments, corrosion inhibitors etc.	0,1%, Any intentionally added content must be reported.
46.1			D	LR	Steel for machining purposes and galvanized steel with ≤ 0,35% Lead			
46.2			D	LR	Aluminum with ≤ 1,5% Lead until July 1, 2008			
46.3			D	LR	Aluminum with ≤ 0,4% Lead.			

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
46.4			D	LR	Copper alloys with $\leq$ 4% Lead			
46.5			D	LR	Vulcanising agents and stabilisers for elastomers in fluid handling and powertrain applications containing up to 0,5 % lead by weight 1 July 2006			
46.6			D	LR	Bonding agents for elastomers in powertrain applications containing up to 0,5 % lead by weight			

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
46.7			D	LR	Copper in friction materials of brakelinings containing >0,4% lead by weight Allowed until July 1, 2007			
46.8			D	LR	Valve seats for engine types developed before July 1, 2003. Allowed until July 1, 2007.			
46.9			D	LR	Pyrotechnic initiators. Allowed for vehicles type-approved before 1 July 2006 and replacement initiators for these vehicles			
46.10			D	LR	Batteries			
46.11			D	LR	Vibration dampers			

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
46.12			D	LR	Electrical components containing lead in a glass or ceramic matrix compound (except for glass in bulbs and the glaze of spark plugs)			
46.13			D	LR	Bearing-shells and bushings until July 1, 2008			
46.14			D	LR	Maximum concentration by weight up to 0,1% per homogenous material			
46.15			D	LR	Solder in electronic circuit boards and other electric applications			

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
47	<b>Mercury and its compounds (*)</b>		P		All applications except those listed below	EU-D 2000/53/EEC EU-D 67/548/EEC EU-D 76/769/EEC	Metallic mercury, and inorganic and organic mercury compounds used in high intensity discharge (HID) lamps, electric switches, luminescent material for instrument lighting, pyrotechnic initiators etc.	0,1%. Any intentionally added content must be reported.
47.1			D	LR	Discharge lamps and instrument panel displays			
47.2			D	LR	Maximum concentration by weight up to 0,1% per homogenous material			
48	<b>Methanol</b>	67-56-1	D	FI		Norway, Sweden (SFS 1985:840; SFS 1986:8), Denmark, Finland	Window Washer fluid applications	
49	<b>Methylacrylamidomethoxy-acetate</b>	77402-03-0	D	FI		EU-D 67/548/EEC	production of polymers	

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
50	<b>Mineral Fibers (Natural or Synthetic) except Continuous Filament Fibres (*)</b>		D	FI		World Health Organization for definition of respirable fiber, and IARC monograph 81, 2002, for Man-Made vitreous fibers	Friction lining, screens, re-enforcements, insulation, cables	All fibers or fibrils 5 microns or less, in diameter, with a length:diameter ratio equal to or greater than 3:1
51	<b>Monomethyldibromodiphenylmethane</b>	99688-47-8	D	FI		EU Directive 76/769/EEC	Residues and decomposition products in production of polymers	
52	<b>Monomethyldichlorodiphenylmethane</b>	81161-70-8	D	FI		EU Directive 76/769/EEC	Residues and decomposition products in production of polymers	
53	<b>Monomethyltetrachlorodiphenylmethane</b>	76253-60-6	D	FI		EU Directive 76/769/EEC	Residues and decomposition products in manufacture of polymers	
54	<b>2-Naphthylamine and its salts (*)</b>		P	LR		EU-D 67/548/EEC EU-D 76/769/EEC		0,01%
55	<b>Nickel and its compounds (*)</b>		D	FI		EU-D 76/769/EEC	Welding electrodes, flame spraying, special materials, component in metals	

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
56	Nitrites (*)		D	FI		EU-D 67/548/EEC	Additives in engine coolants, vulcanising agents in rubber products, anticorrosion surface additive. Reaction product precursor for potentially carcinogenic N-nitroso- compounds	
57	4-Nitrobiphenyl and its salts (*)		P	LR		EU-D 67/548/EEC EU-D 76/769/EEC		0,01%
58	Nitrocellulose	9004-70-0	D	FI		Pyrotechnical compound	Pyrotechnical compound	
59	N-Nitrosamines (*)		D	FA		TRGS 552, TRGS 615 TRGS 905		
60	Nonylphenol ethoxylates (*)		D	FI		EU-D 2003/53/EC	Surfactants, leather processing	
61	Pentachlorophenol (PCP) and its salts (*)		P	LR		EU-D 67/548/EEC EU-D 76/769/EEC	Wood preservative, salts used in leather treatment, stabilizer for latex	
62	Perchlorates (*)		D	FA		California Assemy Bill No. 826 - Perchlorate Contamination Prevention Act; implemented July 1, 2006. <a href="http://www.dtsc.ca.gov/HazardousWaste/Perchlorate/">http://www.dtsc.ca.gov/HazardousWaste/Perchlorate/</a>	Pyrotechnical compound	

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
63	<b>Perfluorooctane sulfonates C8F17SO2X (X = OH, Metal salt, halide, amide, and other derivatives including polymers) (*)</b>		D	FA		76/769/EEC 2006/122EEC (Prohibited from July 1st 2008)	Surface coatings	
64	<b>Phenol</b>	108-95-2	D	FI		EU-D 67/548/EEC	Residual monomer in phenolic resins, epoxy resins, anti-oxidant in phenol derivatives, decomposition product in polymeric materials, wooden materials and textiles	
65	<b>Phenol, 2-(2H-benzotriazol-2-yl)-4,6-bis(1,1-dimethylethyl)-</b>	3846-71-7	D	FA		Japan (Chemical Substances control Law)	UV Stabilizer in plastics for trim parts, etc.	
66	<b>Phenol, 2,4,6-tris(1,1-dimethylethyl)-</b>	732-26-3	D	FI		Japan (Chemical Substances control Law)	Petrochemical products	
67	<b>Phenylendiamines and its salts (*)</b>		D	FI		EU-D 67/548/EEC EU-D 76/769/EEC Japan (Chemical Substances control Law)	Dyes, chemical intermediate, Petrochemical additive	
68	<b>Phthalates, selected (*)</b>		D	FA		EU-D 76/769/EEC	Plasticiser	
69	<b>Polyamine Curing Agents, selected (*)</b>		D	FI		Not currently regulated but releasable hexamines are relevant to vehicle interior air quality		

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
70	<b>Polybrominated biphenyls (PBB) (*)</b>		P	LR		EU-D 76/769/EEC		0,001% D or P depends on individual substance
71	<b>Polybrominated diphenyl ethers (PBDE) (*)</b>		D, except	FI		EU-D 2003/11/EC	Flame Retardant	
	<b>Octabromodiphenyl ether ('Octa')</b>	32536-52-0	P	LR				
	<b>Pentabromodiphenyl ether ('Penta')</b>	32534-81-9	P	LR				
72	<b>Polybrominated Terphenyls ( PBT )</b>		D	FI			Flame retardants in plastics and textiles.	
73	<b>Polychlorinated Biphenyls ( PCB ) (*)</b>		P	LR		EU-D 76/769/EEC	Insulation fluid in electrical systems, switch boards transformers and condensers, in wood and paper impregnation, as a softening agent	0.005%
74	<b>Polychlorinated Naphthalenes (*)</b>		D	FI		Japan (Chemical Substances control Law)	Petrochemical additive	
75	<b>Polychlorinated Terphenyls ( PCT ) (*)</b>		P	LR		ChemVerbotsV	Insulation fluid in electrical systems, switch boards transformers and condensers, in wood and paper impregnation, as a softening agent	0,005%
76	<b>Polycyclic aromatic hydrocarbons (PAH; PCAH), selected (*)</b>		D	FA		EU-D 67/548/EEC EU-D 2005/69/EC	Extender oils	1-10 ppm (see individual thresholds)

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
77	<b>Radioactive substances (including scrap metal contaminants)</b>		D	FI		EU-D 96/29/ Euratom	High intensity discharge lamps	Above Background radiation
78	<b>Selenium and its compounds (*)</b>		D	FI		Japan (Waste Disposal and Cleansing Law)	Photorelectronic device, Glass colorant and decolorant, Free-cutting steel, Semiconductor	
79	<b>Sodium azide</b>	26628-22-8	D	FI		Pyrotechnical compound	Pyrotechnical compound	
80	<b>Styrene ( Vinyl benzene )</b>	100-42-5	D	FI		EU-D 67/548/EEC	Residual monomer in ABS-, Polystyrene-, SMC-, UPE-resin	
81	<b>Styrene oxide (Epoxy styrene)</b>	96-09-3	D	FI		EU-D 67/548/EEC	Residual monomer	
82	<b>Sulfur Hexafluoride</b>	2551-62-4	P	FA		Substance of concern due to global warming potential	Vehicle applications (e.g. tire inflator systems)	
83	<b>Tetrabromobisphenol A (TBBPA)</b>	79-94-7	D	FI		EU risk assessment	Flame retardants in polymers, textiles etc.	
84	<b>Thallium and its compounds (*)</b>		D	FI		EU-D 67/548/EEC	Electric components, sensors	
85	<b>Thioperoxydicarbonic diamide [(H<sub>2</sub>N)C(S)]<sub>2</sub>S<sub>2</sub>), tetramethyl-</b>	137-26-8	D	FI		Japan:(Waste Disposal and Cleaning Law)	Vulcanization accelerator for rubber	
86	<b>Tris(2-chloroethyl)phosphate</b>	115-96-8	D	FI		EU-D 67/548/EEC	Flame retardant	
87	<b>Trichlorophenol and its salts (*)</b>		D	FI		EU-D 67/548/EEC	Biocide (e.g. preservative for leather and textiles)	
88	<b>Trichloropropane ( 1,2,3 - Trichloropropane )</b>	96-18-4	D	FI		EU-D 67/548/EEC	As solvent and as trifunctional cross-linking agent e.g. for polysulphide elastomers	

	Substance	CAS-No.	Classification	Reason code	Application	Source (Legal requirements regulations)	Generic examples	Threshold (0,1% if not stated otherwise)
89	<b>Trimethylphosphate</b>	512-56-1	D	FI		( EU-D 76/769/EEC)	Flame retardant	
90	<b>Triorganotin compounds (trialkyl- and triaryltin compounds) (*)</b>		D	FA		EU-D 76/769/EEC EU-D 67/548/EEC	Biocides	
91	<b>Triphenylphosphate</b>	115-86-6	D	FI		Flame retardant under review	Flame retardant	
92	<b>Tris-(1-aziridiny) phosphine oxide</b>	545-55-1	P	LR		EU-D 83/264/EEC	Flame retardant	
93	<b>Tris(2,3-dibromopropyl)phosphate [TRIS]</b>	126-72-7	P	LR		EU-D 79/663/EEC	Flame retardant	
94	<b>Vinyl chloride</b>	75-01-4	P	LR		EU-D 67/548/EEC	Residual monomer in polymers	Threshold 5ppm vinyl chloride monomer in materials