

EN	Title English	OSRAM Index List Environment	Status & Code	Released
DE	Titel Deutsch	OSRAM Indexliste Umwelt	RL	Freigegeben
Additional classification Zusätzliche Klassifizierung			EDOS No. [Version]	ZTT 1849808 [13]
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OSRAM Guideline Hazardous Substances

OSRAM Guideline Hazardous Substances is to be applied in the design and production of environmentally compatible products of all business units of OSRAM and affiliated companies (OSRAM) as well as for procurement of equipment, parts and materials used in products distributed by OSRAM. It is a high ambition of OSRAM to avoid and reduce certain hazardous substances in products above and beyond statutory regulations.

Placing on the market of certain hazardous substances in electrical and electronic equipment is subject to specific regional (EU) or national restrictions and bans. Within the European Union (EU) these restrictions and bans are defined in EU-Directives and subsequent member states' national regulations, and in directly legally enforceable regulations. In addition OSRAM has to fulfil specific customer requirements regarding substance content and documentation. Compliance with such restrictions is a legal obligation of the party putting said equipment or products on the market. Therefore either OSRAM or customers of OSRAM bear responsibility.

Equipment, parts and materials supplied to OSRAM go into equipment and products which can be subject to

- the restrictions of substances defined in Directive 2002/95/EC ("**RoHS-Directive**") and 2005/618/EC (see http://ec.europa.eu/environment/waste/weee_index.htm),
- the restrictions of substances defined in Directive 2000/53/EC ("End-of-life vehicles – ELV")
- the restrictions of substances defined in Directive 91/157/EEC ("Directive on batteries"),
- the restrictions of substances defined in Directive 76/769/EEC ("Substance restriction Directive")
- the restrictions of substances defined in Directive 94/62/EC ("Packaging Directive").

The purpose of the **OSRAM Guideline Hazardous Substances** is to inform suppliers and partners about legal and internal requirements regarding substances in products and consists of the following documents:

- the **Supplier's verification** regarding restrictions, avoidance and declaration of materials in products
- Table to be used for products and parts that are subject to RoHS exemptions
- Informative **list of exemptions** of Art. 4(1) of **2002/95/EC** as listed in the annex of the Directive ("RoHS exemptions") including amendments (Status Oct. 2006)
- **OSRAM Index List Environment**:
 - *List of prohibited hazardous substances, Part 1* (sorted by relevant substances)
 - *List of prohibited hazardous substances, Part 2* (sorted by possible applications)
 - *OSRAM List of hazardous substances to be avoided or declared*

The **Suppliers verification** has to be signed by suppliers of equipment, parts and materials, which are delivered to OSRAM and affiliated companies.

The **OSRAM Index List Environment: List of prohibited hazardous substances** (see appendix) provides an informative overview of substance regulations within the EU and other countries. The list is not exhaustive, but focuses on substances (part 1) and applications (part 2). For some substances, the legislator has permitted definite applications or special exceptions. If deliveries to OSRAM contain hazardous substances in applications exempted by such regulations (e.g. RoHS exemptions), then these substances have to be declared by suppliers in advance according to type and amount.

The **OSRAM Index List Environment: List of substances to be avoided or declared** (see appendix) contains hazardous substances whose distribution in products is not or only partially (e.g. for defined applications) prohibited. The use of these substances should be avoided where possible, or at least minimized, since they are a potential hazard to man or the environment during the products manufacture, use or disposal. However, in many cases these substances cannot be avoided for technical or economical reasons. OSRAM clearly encourages its suppliers to focus towards reduction and avoidance of these substances during design and development of new products.

Technical Templates Technischer Vordruck

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OSRAM contact address for environmental issues

OSRAM GmbH

Corporate Environmental Affairs & Technical Safety

Phone.: +49 (0) 89 6213 3309

Fax: +49 (0) 89 6213 3463

Email: environment@info.OSRAM.com

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Suppliers Verification regarding restrictions, avoidance and declaration of materials in products

Supplier:	
Address:	
Responsible person / function:	
Phone & Fax:	
Email:	

The supplier declares that

- products, parts and materials supplied to OSRAM today and in the future satisfy the restrictions and bans defined in regulations listed in OSRAMs Index List Environment in a way, so that the use of these deliveries in products manufactured and distributed by OSRAM or customers of OSRAM does not cause violations of the listed legal requirements;
- a system is installed in suppliers company which ensures compliance with legal requirements regarding use of substances in products as far as applicable. The system includes products, parts and materials procured from sub suppliers. Supplier is able to provide relevant documentation regarding installed processes and product compliance immediately on request;
- according to Directive 2002/95/EC (RoHS Directive) delivered products, parts and materials do not contain the following substances exceeding defined maximum concentration values, unless in an application exempted by Annex of RoHS Directive (incl. amendments). Respective third party measurement results are provided to OSRAM without further request, if available;

Substances / application	Maximum concentration values in homogeneous materials (2002/95/EC - RoHS)
lead (Pb)	0,1 % (weight) / 1000 ppm (parts per million)
mercury (Hg),	0,1 % (wt) / 1000 ppm
cadmium (Cd)	0,01 % (wt) / 100 ppm
hexavalent chromium (Cr ⁶⁺)	0,1 % (wt) / 1000 ppm
polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE)	0,1 % (wt) / 1000 ppm

- in case deliveries to OSRAM contain hazardous substances in applications exempted by Directive 2002/95/EC, these substances will be declared to OSRAM in advance according to type and amount;
- **Optional:** additional specific requirements of OSRAM business units.

OSRAM reserves the right to verify suppliers' compliance with the OSRAM Index List Environment at any time, or to have such verifications carried out by a third party. In case a violation of applicable laws or duties laid down in this document is established after signature of the enclosed verification, OSRAM must be notified immediately. In case suppliers fail to comply with the OSRAM Index List requirements, OSRAM reserves the right to take appropriate actions, including termination of business relationships.

Signature and Stamp

Date

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OSRAM Suppliers declaration regarding restrictions, avoidance and declaration of materials in products

Declaration of products using substances restricted by EU Directive 2002/95/EC (RoHS) in applications which are exempted from the requirements of Article 4(1)

Supplier:						
Address:						
Responsible person /function:						
Phone & Fax:						
Email:						
Product name	Osram part number	Suppliers part number	Prohibited substances in applications exempted in RoHS Directive (number of exemption acc. Annex 2002/95/EC)	Substance amount	Application/Location in product	Remarks

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Annex (informative)

List of Applications of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) which are exempted from the requirements of Article 4(1) of EU Directive 2002/95/EC (Status March 2007)

1. Mercury in compact fluorescent lamps not exceeding 5 mg per lamp.
2. Mercury in straight fluorescent lamps for general purposes not exceeding:
 - halophosphate 10 mg
 - triphosphate with normal lifetime 5 mg
 - triphosphate with long lifetime 8 mg.
3. Mercury in straight fluorescent lamps for special purposes.
4. Mercury in other lamps not specifically mentioned in this Annex.
5. Lead in glass of cathode ray tubes, electronic components and fluorescent tubes.
6. Lead as an alloying element in steel containing up to 0,35 % lead by weight, aluminium containing up to 0,4 % lead by weight and as a copper alloy containing up to 4 % lead by weight.
7. — Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead),
— lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications,
— lead in electronic ceramic parts (e.g. piezoelectronic devices).
8. Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC (1) amending Directive 76/769/EEC (2) relating to restrictions on the marketing and use of certain dangerous substances and preparations.
9. Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators.
- 9a. DecaBDE in polymeric applications.
- 9b. Lead in lead-bronze bearing shells and bushes.
10. Within the procedure referred to in Article 7(2), the Commission shall evaluate the applications for:
 - Deca BDE,
 - mercury in straight fluorescent lamps for special purposes,
 - lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications (with a view to setting a specific time limit for this exemption), and
 - light bulbs,
 as a matter of priority in order to establish as soon as possible whether these items are to be amended accordingly.
11. Lead used in compliant pin connector systems.
12. Lead as a coating material for the thermal conduction module c-ring.
13. Lead and cadmium in optical and filter glass.
14. Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight.
15. Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages.
16. Lead in linear incandescent lamps with silicate coated tubes.
17. Lead halide as radiant agent in High Intensity Discharge (HID) lamps used for professional reprography applications.
18. Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi2O5:Pb) as well as when used as specialty lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS (Sr,Ba)2MgSi2O7:Pb).
19. Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact Energy Saving Lamps (ESL).
20. Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCD).
21. Lead and cadmium in printing inks for the application of enamels on borosilicate glass.
22. Lead as impurity in RIG (rare earth iron garnet) Faraday rotators used for fibre optic communications systems.

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23. Lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with NiFe lead frames and lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with copper lead frames.
24. Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors.
25. Lead oxide in plasma display panels (PDP) and surface conduction electron emitter displays (SED) used in structural elements; notably in the front and rear glass dielectric layer, the bus electrode, the black stripe, the address electrode, the barrier ribs, the seal frit and frit ring as well as in print pastes.
26. Lead oxide in the glass envelope of Black Light Blue (BLB) lamps.
27. Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) loudspeakers.
28. Hexavalent chromium in corrosion preventive coatings of unpainted metal sheetings and fasteners used for corrosion protection and Electro-magnetic Interference Shielding in equipment falling under category three of Directive 2002/96/EC (IT and telecommunications equipment). Exemption granted until 1 July 2007.
29. Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (*).
(*) OJ L 326, 29.12.1969, p. 36. Directive as last amended by 2003 Act of Accession.'

For the purposes of Article 5(1)(a), a maximum concentration value of 0,1 % by weight in homogeneous materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) and of 0,01 % by weight in homogeneous materials for cadmium shall be tolerated.

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**OSRAM Index List Environment: List of prohibited hazardous substances (informative),
Part 1: Relevant substances**

Summary of bans or restrictions on the distribution of hazardous substances,
valid in the EC, in Switzerland and some other countries.

Status: February 2007

Substance	CAS No.	Affected application	Limit value (wt.%) ¹⁾	Excep-tions	Legal regulations ²⁾
Aliphatic CHCs	s. u. ³⁾	All applications	0.1 (total)	yes	EU 76/769/EEC CH ChemRRV App. 1.3
1,1,1-Trichloroethane	71-55-6	All applications	n.g.		CH ChemRRV App. 1.4
Tetrachloromethane	56-23-5				
Short-chain chlorinated paraffins (C ₁₀ -C ₁₃)		Sealing compounds Plastics and rubber	1.0		CH ChemRRV App. 1.2
Asbestos	1332-21-4 see below ⁴⁾	All applications	0.1 (total)	yes	EU 76/769/EEC
			n.g.	yes	CH ChemRRV App. 1.6
Man-made vitreous (sili-cate) fibres with random orientation with oxide of sodium, potassium, calcium, magnesium and barium content >18 % by mass		Articles for heat and noise reduction in building construction Technical insulation	0.1 (total)	yes	DE ChemVerbotsV
Lead and lead com-pounds		Fixed batteries ⁷⁾	0.4	yes	EU 91/157/EEC
			0.1	yes	CH ChemRRV App. 2.15
		Paints and varnishings	0.01	yes	CH ChemRRV App. 2.8
Lead	7439-92-1	Electrical and electronic equipment	0.1	yes	EU 2002/95/EC + 2005/618/EC CH ChemRRV App. 2.16(6)
Cadmium and cadmium compounds		Pigments in plastics Stabilized vinyl chloride polymers and copolymers (e.g. PVC) Metallic surface coating	0.01 0.01 n.g.	yes yes yes	EU 76/769/EEC CH ChemRRV App. 2.9, 2.16(2) DK Statutory Order No. 1199: limit values 0.0075 % !
		Paints and varnishings	0.01	yes	EU ChemRRV App. 2.8
		Fixed batteries ⁷⁾	0.025	yes	EU 91/157/EEC
		Zinc-carbon batteries Fixed batteries ⁷⁾	0.015 0.015	 yes	 CH ChemRRV App. 2.15
		Zinc layers	0.025		CH ChemRRV App. 2.16(3)
Cadmium	7440-43-9	Electrical and electronic equipment	0.01	yes	EU 2002/95/EC + 2005/618/EC CH ChemRRV App. 2.16(6)
Polybrominated biphenyls (PBBs) Polybrominated diphenyl-ethers (PBDEs)		Electrical and electronic equipment	0.1	yes	EU 2002/95/EC + 2005/618/EC CH ChemRRV App. 1.9
Octabromodiphenylether (OBDE)	32536-52-0	All applications	0.1		EU 76/769/EEC DE ChemVerbotsV
Pentabromodiphenyl-ether (PeBDE)	32534-81-9				
Polychlorinated dioxins and furans Polybrominated dioxins and furans	see below ⁵⁾	All applications	Group limit values 0.000 000 5	yes yes	DE ChemVerbotsV

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Substance	CAS No.	Affected application	Limit value (wt.%) ¹⁾	Excep- tions	Legal regulations ²⁾
CFCs and halons	see below ⁶⁾	Aerosols Coolants Foam plastics Cleaning agents and solvents Extinguishing agents	1.0 1.0 n.g. 1.0 1.0	yes yes yes yes yes	EU 2037/2000 US CAA (42 USC 7671 et seq.) CH ChemRRV App. 1.4, 2.3, 2.9-12
HCFCs		Use in cooling and air-conditioning devices	n.g.	yes	EU 2037/2000
FCs		Fire protection systems and fire extinguishers, from 4 July 2007	n.g.		EU Regulation No. 842/2006
FCs HFCs		Non-confined direct-evaporation systems containing refrigerants, from 4 July 2007	n.g.		EU Regulation No. 842/2006
		Cooling and air conditioning equipment (HFCs from 1 January 2008)	n.g.	yes	AT BGBl. Nr. 447/2002
FCs HFCs Sulfur hexafluoride (SF ₆)	2551-62-4	One component foams	n.g.	yes	EU Regulation No. 842/2006
HFCs		Cooling plants, heat pumps, air conditioning plants (comfort cooling) and dehumidifiers with charges ≥ 10 kg	n.g.		DK Statutory Order no. 552 of 2 July 2002
HCFCs (C ₁ to C ₃) HBrFCs (C ₁ to C ₃) Methyl bromide	74-83-9	All applications	n.g.	yes	CH ChemRRV App. 1.4, 2.3, 2.9-12
Formaldehyde	50-00-0	Wooden materials	0.1 ml/m ³ (special testing procedure)	yes	DE ChemVerbotsV AT BGBl. Nr. 194/1990 SE KIFS 1998:8 (9, 20-27 §§)
Halogenated aromatic compounds		Capacitors and transformers	0,05/0,005 (mono-/polyhalogenated)		CH ChemRRV App. 2.14
Pentachlorophenol (PCP) Pentachlorophenol, sodium salt Other PCP salts and compounds	87-86-5 131-52-2	All applications	0.000 5 (total)	yes	EU 76/769/EEC
Perfluorooctane sulfonic acid and its metal salts, halides, amides, and other derivatives including polymers		All applications from 27 June 2008	0.1	yes	EU 76/769/EEC

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Substance	CAS No.	Affected application	Limit value (wt.%) ¹⁾	Exceptions	Legal regulations ²⁾
Polychlorinated biphenyls (PCBs)	1336-36-3	All applications	0.005 (total)	yes	EU 76/769/EEC
Polychlorinated terphenyls (PCTs)	61788-33-8		n.g.		CH ChemRRV App. 1.1, 2.14
Monomethyltetrachlorodiphenylmethane (Ugilec 141)	76253-60-6				
Monomethyldichlorodiphenylmethane (Ugilec 121 or 21)					
Monomethyldibromodiphenylmethane (DBBT)	99688-47-8				
Polychlorinated biphenyls (PCBs)	1336-36-3	Not totally enclosed	0.05	yes	US TSCA (15 USC 2605) + 40 CFR 761
Halogenated biphenyls, terphenyls, naphthalenes		All applications	n.g.		CH ChemRRV App. 1.1
Mercury and mercury compounds		Batteries	0.000 5	yes	EU 98/101/EC
		Fixed batteries ⁷⁾	0.000 5		CH ChemRRV App. 2.15
		Button cells and batteries composed of button cells	2		EU 98/101/EC
					CH ChemRRV App. 2.15
		Alkali-manganese batteries	0.000 5	yes	CH ChemRRV App. 2.15
		Zinc-carbon batteries	0.000 5		CH ChemRRV App. 2.15
All applications	n.g.	yes	CH ChemRRV App. 1.7 NL Decree 9 September 1998 SE SFS 1998:944		
Mercury	7439-97-6	Electrical and electronic equipment	0.1	yes	EU 2002/95/EC + 2005/618/EC
Hexavalent chromium (Cr ^{VI})		Electrical and electronic equipment	0.1	yes	EU 2002/95/EC + 2005/618/EC CH ChemRRV App. 2.16(6)
Heavy metals (lead, cadmium, hexavalent chromium, mercury)		Packaging and packaging components	0.01 (total)		EU 94/62/EC CH ChemRRV App. 2.16(4)
Sulfur hexafluoride (SF ₆)	2551-62-4	Insulating and quenching gas in electro technical systems and appliances up to 1 kV (over 1kV obligation to report)	n.g.		AT BGBl. Nr. 447/2002
		Low voltage plants (≤ 1 kV)	n.g.		DK Statutory Order no. 552 of 2 July 2002
		All applications (over 1 kg obligation to report in cases of exceptions)	n.g.	yes	CH ChemRRV App. 1.5
Arsenic compounds		Wood	n.g.	yes	EU 76/769/EEC
Tar oils	8001-58-9	Wood and wooden materials	n.g.	yes	EU 76/769/EEC
Carcinogenic, mutagenic and reproduction toxic chemicals (categories 1 and 2)		Substances and preparations for private customers	Depends on the chemical	yes	EU 76/769/EEC

List is based on Standard SN 36350 (Environmentally Compatible Products) part 2.

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OSRAM Index List Environment: List of prohibited hazardous substances (informative)
Part 2: Products and product parts which can be affected by legal bans of hazardous substances

Summary of bans or restrictions on the distribution of hazardous substances,
valid in the EU, in Germany, in Switzerland and some other countries.

Status: March 2007

Product / product part	Prohibited substance	CAS No.	Limit value (wt.%) ¹⁾	Excep-tions	Legal regulations ²⁾
Electrical and electronic equipment					
Electrical and electronic equipment with the excep-tion of medical devices and monitoring and control in-struments	Lead	7439-92-1	0.1	yes	EU 2002/95/EC + 2005/618/EC CH ChemRRV App. 1.7, 1.9, 2.16(6)
	Cadmium	7440-43-9	0.01		
	Mercury	7439-97-6	0.1		
	Hexavalent chromium (Cr ^{VI})		0.1		
	Polybrominated biphen-yls (PBBs) Polybrominated di-phenylethers (PBDEs)		0.1		
Electrotechnical systems and appliances up to 1 kV with insulating and quench-ing gas	Sulfur hexafluoride (SF ₆)	2551-62-4	n.g.		AT BGBl. Nr. 447/2002 DK Statutory Order no. 552 of 2 July 2002
Batteries					
Batteries and accumulators	Mercury	7439-97-6	0.000 5	yes	EU 98/101/EC
Alkali-manganese batteries	Mercury	7439-97-6	0.000 5	yes	CH ChemRRV App. 2.15
Button cells and batteries composed of button cells	Mercury	7439-97-6	2		EU 98/101/EC CH ChemRRV App. 2.15
Zinc-carbon batteries	Cadmium	7440-43-9	0.015		CH ChemRRV App. 2.15
	Mercury	7439-97-6	0.000 5		
Fixed batteries ⁷⁾	Lead	7439-92-1	0.4	yes	EU 91/157/EEC CH ChemRRV App. 2.15
	Lead	7439-92-1	0.1		
	Cadmium	7440-43-9	0.025		
	Mercury	7439-97-6	0.000 5		
	Cadmium	7440-43-9	0.015		
Electrical components (see also category "General prohibitions, ...")					
Capacitors and transformers	Halogenated aromatic compounds		0.05/0.005 mono/poly-halogenated		CH ChemRRV App. 2.14
Plastic parts (see also category "General prohibitions, ...")					
Dyed plastics	Cadmium compounds		0.01	yes	EU 76/769/EEC CH ChemRRV App. 2.9 DK Statutory Order No. 1199: limit value 0.0075 % !
Stabilized vinyl chloride polymers and copolymers (e.g. PVC)					
Flame retarded plastic parts	Octabromodiphenyl-ether (OBDE)	32536-52-0	0.1		EU 76/769/EEC DE ChemVerbotsV
	Pentabromodiphenyl-ether (PeBDE)	32534-81-9			
Sealing compounds Plastics and rubber	Short-chained chlorin-ated paraffins (C ₁₀ -C ₁₃)		1.0		CH ChemRRV App. 1.2
Insulating materials (see also category "General prohibitions, ...")					
Foam plastics	CFCs and halons	⁸⁾	n.g.	yes	EU 2037/2000 US CAA (42 USC 7671 et seq.) CH ChemRRV App. 1.4, 2.9
One component foams, From 4 July 2008	FCs HFCs Sulfur hexafluoride (SF ₆)	2551-62-4	n.g.	yes	EU Regulation No. 842/2006

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Product / product part	Prohibited substance	CAS No.	Limit value (wt.%) ¹⁾	Excep-tions	Legal regulations ²⁾
Metallic layers					
Metallic surface coatings	Cadmium	7440-43-9	n.g.	yes	EU 76/769/EEC CH ChemRRV App. 2.16(2) DK Statutory Order No. 1199: limit value 0.0075 % !
Zinc layers	Cadmium	7440-43-9	0.025	yes	CH ChemRRV App. 2.16(3)
Painted or varnished articles					
Paints and varnishes	Cadmium and cadmium compounds		0.01	yes	CH ChemRRV App. 2.8
	Lead and lead compounds		0.01	yes	
Other materials					
Wood and wooden materials	Arsenic compounds		n.g.	yes	EU 76/769/EEC
	Tar oils	8001-58-9	n.g.	yes	EU 76/769/EEC
	Pentachlorophenol (PCP)	87-86-5	0.000 5 (total)	yes	EU 76/769/EEC
	Pentachlorophenol, sodium salt Other PCP salts and compounds	131-52-2			
Wooden materials and furniture	Formaldehyde	50-00-0	0,1 ml/m ³ (special testing procedure)	yes	DE ChemVerbotsV AT BGBl. 194/1990 SE KIFS 1998:8 (Chapter 9, 20-27 §§)
Packaging					
Packaging and packaging components	Heavy metals (lead, cadmium, hexavalent chromium, mercury)		0.01 (total)		EU 94/62/EC
Cleaning agents, solvents, coolants and extinguishing agents					
Cleaning agents and solvents	CFCs and halons	⁶⁾	1.0	yes	EU 2037/2000 US CAA (42 USC 7671 et seq.) CH ChemRRV App. 1.4, 2.3
	HCFCs and HBrFCs (C ₁ to C ₃) Methyl bromide	74-83-9	n.g.	yes	CH ChemRRV App. 1.4, 2.3
	Aliphatic CHCs	³⁾	0.1 (total)	yes	EU 76/769/EEC
	1,1,1-Trichloroethane Tetrachloromethane	71-55-6 56-23-5	n.g.		CH ChemRRV App. 1.4
Coolants	CFCs and halons	⁶⁾	1.0	yes	EU 2037/2000 US CAA (42 USC 7671 et seq.) CH ChemRRV App. 1.4, 2.10
	FCs HFCs from 1 January 2008		n.g.	yes	AT BGBl. Nr. 447/2002
	HCFCs and HBrFCs (C ₁ to C ₃) Methyl bromide	74-83-9	n.g.	yes	CH ChemRRV App. 1.4, 2.10
Use in cooling and air-conditioning devices	HCFCs		n.g.	yes	EU 2037/2000
Non-confined direct-evaporation systems containing refrigerants, from 4 July 2007	FCs HFCs		n.g.		EU Regulation No. 842/2006

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Product / product part	Prohibited substance	CAS No.	Limit value (wt.%) ¹⁾	Excep-tions	Legal regulations ²⁾
Cooling plants, heat pumps, air conditioning plants (comfort cooling) and dehumidifiers with charges ≥ 10 kg	HFCs		n.g.		DK Statutory Order no. 552 of 2 July 2002
Extinguishing agents	CFCs and halons	⁶⁾	1.0	yes	EU 2037/2000 US CAA (42 USC 7671 et seq.) CH ChemRRV App. 1.4, 2.11
	HCFCs and HBrFCs (C ₁ to C ₃) Methyl bromide	74-83-9	n.g.	yes	CH ChemRRV App. 1.4, 2.11
	Perfluorooctane sulfonic acid and its metal salts, halides, amides, and other derivatives including polymers from 27 June 2008		0.1	yes	EU 76/769/EEC
Fire protection systems and fire extinguishers, from 4 July 2007	FCs		n.g.		EU Regulation No. 842/2006
Aerosols					
Aerosols	CFCs and halons	⁶⁾	1.0	yes	EU 2037/2000 US CAA (42 USC 7671 et seq.) CH ChemRRV App. 1.4, 2.12
	FCs HFCs		n.g.	yes	AT BGBl. Nr. 447/2002
	HCFCs and HBrFCs (C ₁ to C ₃) Methyl bromide	74-83-9	n.g.	yes	CH ChemRRV App. 1.4, 2.12
	Vinyl chloride	75-01-4	n.g.		EU 76/769/EEC
	General prohibitions, exemplarily allotted to products and product parts				
Insulating materials Gaskets	Asbestos	1332-21-4 ⁴⁾	0,1 (total)	yes	EU 76/769/EEC
			n.g.	yes	CH ChemRRV App. 1.6
Articles for heat and noise reduction (in building construction) Technical insulation	Man-made vitreous (silicate) fibres with random orientation with oxide of sodium, potassium, calcium, magnesium and barium content >18 % by mass		0.1 (total)	yes	DE ChemVerbotsV
Plastic parts Cast resins	Polychlorinated dioxins and furans Polybrominated dioxins and furans	⁵⁾	Group limit values 0.000 000 5	yes	DE ChemVerbotsV
				yes	

Technical Templates Technischer Vordruck

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Product / product part	Prohibited substance	CAS No.	Limit value (wt.%) ¹⁾	Excep-tions	Legal regulations ²⁾
Transformers Power capacitors	Polychlorinated biphenyls (PCBs)	1336-36-3	0.005 (total)	yes	EU 76/769/EEC US TSCA (15 USC 2605)
	Polychlorinated terphenyls (PCTs)	61788-33-8	n.g.		CH ChemRRV App. 1.1, 2.14
	Monomethyltetrachlorodiphenylmethane (Ugilec 141)	76253-60-6			
	Monomethyldichlorodiphenylmethane (Ugilec 121 or 21)				
	Monomethyldibromodiphenylmethane (DBBT)	99688-47-8			
	Halogenated biphenyls, terphenyls, naphthalenes		n.g.		CH ChemRRV App. 1.1
Substances and preparations in operating materials for private costumers	Carcinogenic, mutagenic and reproduction toxic chemicals (categories 1 and 2)		Depends on the chemical	yes	EU 76/769/EEC

List is based on Standard SN 36350 (Environmentally Compatible Products) part 2.

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Notes

1) "n.g." means that no limit value is given in the legislation. In these cases the legally given concentration limits for taking substances into account are to be observed.

2) Country codes according to ISO 3166

BattV	German battery ordinance (Batterieverordnung)
BGBI DE/AT	German/Austrian federal law gazette (Bundesgesetzblatt)
ChemVerbotsV	German chemicals prohibition ordinance (Chemikalienverbotsverordnung)
CAA	Clean Air Act
FCKWHalonVerbV	German CFC and halons prohibition ordinance (FCKW-Halon-Verbotsverordnung)
KIFS	Swedish National Chemicals Inspectorate's Regulations (Kemikalieinspektionens föreskrifter)
RoHS	Directive of the European Parliament and the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (Directive 2002/95/EC)
SFS	Swedish Code of Statutes (Svensk författningssamling)
ChemRRV	Swiss ordinance on reduction of chemical risks (Chemikalien-Risikoreduktions-Verordnung)
TSCA	Toxic Substances Control Act
VerpackV	German packaging ordinance (Verpackungsverordnung)

	CAS No.		CAS No.
3) Aliphatic CHCs		6) CFCs/Halons	
Tetrachloromethane	56-23-5	Trichlorofluoromethane (R11)	75-69-4
1,1,2,2-Tetrachloroethane	79-34-5	Dichlorodifluoromethane (R12)	75-71-8
1,1,1,2-Tetrachloroethane	630-20-6	Chlorotrifluoromethane (R13)	75-72-9
Pentachloroethane	76-01-7	Tetrachlorodifluoroethane (R112)	76-11-9
Trichloromethane (Chloroform)	67-66-3	Trichlorotrifluoroethane (R113)	76-13-1
1,1,1-Trichloroethane	71-55-6	Dichlorotetrafluoroethane (R114)	76-14-2
1,1,2-Trichloroethane	79-00-5	Chloropentafluoroethane (R115)	76-15-3
1,1-Dichloroethylene	75-35-4	Bromochlorodifluoromethane (Halon 1211)	353-59-3
4) Asbestos		Bromotrifluoromethane (Halon 1301)	75-63-8
Aktinolite	77536-66-4	Dibromotetrafluoroethane (Halon 2402)	124-73-2
Amosite	12172-73-5	Tetrachloromethane	56-23-5
Anthophyllite	77536-67-5	1,1,1-Trichloroethane	71-55-6
Chrysotile	12001-29-5	Chlorodifluoromethane (R22)	75-45-6
Crocidolite	12001-28-4		
Tremolite	77536-68-6		
5) Halogenated dioxins and furans			
2,3,7,8-Tetra-CDD	1746-01-6	1,2,3,4,6,7,8,9-Octa-CDD	3268-87-9
1,2,3,7,8-Penta-CDD	40321-76-4	1,2,3,4,6,7,8-Hepta-CDF	67562-39-4
2,3,7,8-Tetra-CDF	51207-31-9	1,2,3,4,7,8,9-Hepta-CDF	55673-89-7
2,3,4,7,8-Penta-CDF	57117-31-4	1,2,3,4,6,7,8,9-Octa-CDF	39001-02-0
1,2,3,4,7,8-Hexa-CDD	39227-28-6	2,3,7,8-Tetra-BDD	50585-81-6
1,2,3,7,8,9-Hexa-CDD	19408-74-3	1,2,3,7,8-Penta-BDD	109333-34-8
1,2,3,6,7,8-Hexa-CDD	57653-85-7	2,3,7,8-Tetra-BDF	67733-57-7
1,2,3,7,8-Penta-CDF	57117-41-6	2,3,4,7,8-Penta-BDF	131166-92-2
1,2,3,4,7,8-Hexa-CDF	70648-26-9	1,2,3,4,7,8-Hexa-BDD	110999-44-5
1,2,3,7,8,9-Hexa-CDF	72918-21-9	1,2,3,7,8,9-Hexa-BDD	110999-46-7
1,2,3,6,7,8-Hexa-CDF	57117-44-9	1,2,3,6,7,8-Hexa-BDD	110999-45-6
2,3,4,6,7,8-Hexa-CDF	60851-34-5	1,2,3,7,8-Penta-BDF	109333-34-8
1,2,3,4,6,7,8-Hepta-CDD	35822-46-9		

7) Fixed batteries are those which cannot be removed without effort from the appliances. They are either soldered, welded or in some other manner permanently connected to the contacts.

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Osram Index List Environment: List of hazardous substances to be avoided or declared
This list contains a regularly reviewed selection of relevant hazardous substances.
Status: March 2007

No.	Substances	Reason	Examples of application
100	Antimony trioxide	Possibly carcinogenic (cat. 3), aggravated classification possible	Plastics with halogenated flame retardants
200	Arsenic and its compounds	Toxic, arsenic trioxide as well as arsenic acid and its salts are also carcinogenic	Pb and Cu alloys, metal adhesives, soft solders, pigments
300	Azo compounds with carcinogenic amino components	Release carcinogenic substances	Dyed plastics
400	Lead and its compounds	Teratogenic	Solder, hybrid circuits, stabilizers in plastics
500	Halogenated flame retardants	May form harmful halogen compounds, thereby rendering plastic non-recyclable waste	Flame retardants in circuit boards and plastic parts
600	Cadmium and its compounds	Toxic, some compounds (cadmium chloride, cadmium oxide and cadmium sulfate) are carcinogenic To be declared, if content of Cadmium is equal or higher than: 20 ppm in solder 5 ppm in plastics (incl. rubbers)	Accumulators, batteries, contacts, hard and soft solders
700	Chlorinated hydrocarbons	Aquatic pollutants, non-degradable, accumulate in organisms	Solvents, cleaning and degreasing agents
800	Chlorinated paraffins	Aquatic pollutants, non-degradable, accumulate in organisms; short-chain chlorinated paraffins are carcinogenic	Additives in metalworking lubricants, flame retardant plasticizers in plastics, flame retardants in rubbers
900	Chromium (VI) compounds	Carcinogenic in inhalable form	Coatings, pigments in plastics, industrial tubes
1000	Dibutylphthalate (DBP)	Toxic to reproduction, aquatic pollutant	Plasticizer, particularly in PVC
1100	Bis(2-ethylhexyl)phthalate (Diethylhexylphthalate, DEHP)	Toxic to reproduction	Common plasticizer, particularly in PVC
1200	Dimethylformamide (DMF)	Toxic to reproduction	Electrolyte capacitors
1300	HCFCs (CFC substitutes)	Contribute to global warming, ozone depleting	Coolants and cleaning agents
1400	Synthetic mineral fibres classified as carcinogenic	Carcinogenic on inhalation Restricted in Germany	Thermal insulating materials
1500	Nickel, Nickel compounds and Nickel based alloys	Several Nickel compounds are carcinogen; sensitization is possible in case of contact with skin.	Metal parts, sockets, wires
1600	Radioactive substances	Radioactive	Measuring devices, thorium in welding electrodes
1700	Selenium and its compounds	Acutely and chronically toxic	Plastics, photoelectric coatings, diodes, rectifiers, pigments
The following group of substances are only regarded as a risk in the form of inhalable dust or smoke produced during processing, e.g. grinding or welding. These substances are not regarded as hazardous in their compact form, as part of a manufactured product.			
1800	Beryllium and its compounds	Very toxic and carcinogenic in inhalable form (dust or smoke)	Contact and spring materials, beryllium oxide ceramics, high-temperature materials
2000	PAH (polycyclic aromatic hydrocarbons)	Persistent, toxic, certain compounds are carcinogenic	Plastics, elastomers, rubber

Threshold concentration value for declaration: 0.1 % by weight in homogeneous materials