

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

## 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 2011/65/EU (Recast RoHS Directive, see [http://ec.europa.eu/environment/waste/weee\\_index.htm](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 2006/66/EC ("Directive on batteries"),
- the restrictions of substances defined in EU Directive 1907/2006/EC ("REACH")
- 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:

- **Supplier's Verification** regarding restrictions, avoidance and declaration of materials in products
- 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 July 2011)
- **OSRAM Index List Environment:**
  - *List of prohibited hazardous substances* (sorted by possible applications)
  - *OSRAM List of declarable substances*

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 applications. 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 in the web based data base BOMCheck®.

The **OSRAM Index List Environment: List of declarable substances** (see appendix) contains hazardous substances whose distribution in products is not or only partially (e.g. for defined applications or defined area) prohibited. The use of these substances should be avoided where possible (e.g. DEHP in PVC cables), 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. This is particularly recommended for substances on the REACH candidate list, so called SVHC (see below). If products containing these substances are delivered to OSRAM, a corresponding declaration must be available in BOMCheck®.

REACH Article 33 (1) requires contract manufacturers and distributors who supply an article which contains more than 0.1% weight by weight (w/w) of any Candidate List Substance of Very High Concern (SVHC) to provide their industrial customers with: "sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance.



EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

Substance declarations are often requested by OSRAM customers, e.g. use of SVHC, halogenated flame retardants, arsenic compounds in lamp glass require to collect such information from SUPPLIER.

Due to the dynamic changes of above mentioned regulations or customer expectations, regular updates of these declarations will be essential in the future. In order to be able to manage all information requirements OSRAM decided to join the substance declaration web-hosted database BOMCheck® ([www.BOMCheck.net](http://www.BOMCheck.net)).

BOMCheck® is an industry-wide initiative offering a regulatory compliance tool designed specifically to enable suppliers to provide declarations for REACH, RoHS and other restricted substances legislation.

The BOMCheck® system offers the following benefits:

- Efficient and low cost method to demonstrate chemical compliance to all customers
- Expert guidance to create substances declarations for manufacturer part lists
- Keep up-to-date as new substances are added to REACH and RoHS
- Matching table for customer part number vs. manufacturer part number
- Attach manufacturer's electronic signature to the substance declarations
- Inform all manufacturing customers
- Reducing the risk of regulatory non-compliance

OSRAM will access supplier substance declarations directly from BOMCheck® in order to be able to make compliance assessments of our products.

### OSRAM contact address for environmental issues

OSRAM AG  
 Environment, Health & Safety  
 Fax: +49 (0) 89 6213 3463  
 Email: [environment@info.OSRAM.com](mailto:environment@info.OSRAM.com)

#500000306522 #173 #M. GORBACHEVA #PLP (V)  
 #OSRAM Index List Environment  
 #0E0  
 #2011-07-26 #for internal use  
 #RL-Released  
 ZTT 1849808-000-15



EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808[15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

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

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

The supplier verifies 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 <sup>6+</sup> )	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, amount and applications will be declared to OSRAM in advance per product/product family;
- in case deliveries to OSRAM contain any substance that is listed in Annex XIV current Regulation 1907/2006, Name of these substances and amount will be declared to OSRAM in advance per product/product family;

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

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

## 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: December 2010)

1	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	
1(a)	For general lighting purposes < 30 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011 until 31 December 2012; 2,5 mg shall be used per burner after 31 December 2012
1(b)	For general lighting purposes ≥ 30 W and < 50 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011
1(c)	For general lighting purposes ≥ 50 W and < 150 W: 5 mg	
1(d)	For general lighting purposes ≥ 150 W: 15 mg	
1(e)	For general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm	No limitation of use until 31 December 2011; 7 mg may be used per burner after 31 December 2011
1(f)	For special purposes 5 mg	
2(a)	Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):	
2(a)(1)	Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 5 mg	Expires on 31 December 2011; 4 mg may be used per lamp after 31 December 2011
2(a)(2)	Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5): 5 mg	Expires on 31 December 2011; 3 mg may be used per lamp after 31 December 2011
2(a)(3)	Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and ≤ 28 mm (e.g. T8): 5 mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
2(a)(4)	Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg	Expires on 31 December 2012; 3,5 mg may be used per lamp after 31 December 2012
2(a)(5)	Tri-band phosphor with long lifetime (≥ 25 000 h): 8 mg	Expires on 31 December 2011; 5 mg may be used per lamp after 31 December 2011
2(b)	Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b)(1)	Linear halophosphate lamps with tube > 28 mm (e.g. T10 and T12): 10 mg	Expires on 13 April 2012
2(b)(2)	Non-linear halophosphate lamps (all diameters): 15 mg	Expires on 13 April 2016
2(b)(3)	Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
2(b)(4)	Lamps for other general lighting and special purposes (e.g. induction lamps)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
3	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):	
3(a)	Short length (≤ 500 mm)	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
3(b)	Medium length (> 500 mm and ≤ 1 500 mm)	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

3(c)	Long length (> 1 500 mm)	No limitation of use until 31 December 2011; 13 mg may be used per lamp after 31 December 2011
4(a)	Mercury in other low pressure discharge lamps (per lamp)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
4(b)	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60:	
4(b)-I	P ≤ 155 W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(b)-II	155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(b)-III	P > 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(c)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):	
4(c)-I	P ≤ 155 W	No limitation of use until 31 December 2011; 25 mg may be used per burner after 31 December 2011
4(c)-II	155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(c)-III	P > 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(d)	Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e)	Mercury in metal halide lamps (MH)	
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	
5(a)	Lead in glass of cathode ray tubes	
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
6(a)	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight	
6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	
6(c)	Copper alloy containing up to 4 % lead by weight	
7(a)	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)	
7(b)	Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	
7(c)-I	Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound	

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
7(c)-III	Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
8(a)	Cadmium and its compounds in one shot pellet type thermal cut-offs	Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012
8(b)	Cadmium and its compounds in electrical contacts	
9	Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	
9(b)	Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	
11(a)	Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010
11(b)	Lead used in other than C-press compliant pin connector systems	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
12	Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010
13(a)	Lead in white glasses used for optical applications	
13(b)	Cadmium and lead in filter glasses and glasses used for reflectance standards	
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	Expired on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
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	Expires on 1 September 2013
17	Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18(a)	Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba) <sub>2</sub> MgSi <sub>2</sub> O <sub>7</sub> :Pb)	Expired on 1 January 2011
18(b)	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 (BaSi <sub>2</sub> O <sub>5</sub> :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)	Expires on 1 June 2011

ZTT 1849808-000-15 #RL-Released #2011-07-26 #for internal use #0E0 #OSRAM Index List Environment #500000306522 #173 #M.GORBACHEVA #PLP (V)

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

20	Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)	Expires on 1 June 2011
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	
23	Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	
25	Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
26	Lead oxide in the glass envelope of black light blue lamps	Expires on 1 June 2011
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	Expired on 24 September 2010
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC ( 1)	
30	Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more	
31	Lead in soldering materials in mercury free flat fluorescent lamps (which, e.g. are used for liquid crystal displays, design or industrial lighting)	
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	
33	Lead in solders for the soldering of thin copper wires of 100 µg diameter and less in power transformers	
34	Lead in cermet-based trimmer potentiometer elements	
36	Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display	Expired on 1 July 2010
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
39	Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm <sup>2</sup> of light-emitting area) for use in solid state illumination or display systems	Expires on 1 July 2014

#500000306522 #173 #M.GORBACHEVA #PLP (V)  
#0E0 #OSRAM Index List Environment  
#2011-07-26 #for internal use  
#RL-Released

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

OSRAM Index List Environment: List of prohibited hazardous substances					
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 and other countries.					
Status: April 2011					
Substance/ substance group	CAS No.	Affected applica- tion	Limit value (wt.%) <sup>1)</sup>	Ex- cem.	Legal regulations <sup>2)</sup>
<b>Electrical and electronic equipment and components; metal, glass and ceramic parts</b>					
Lead	7439-92-1	Electrical and elec- tronic equipment	0.1	yes	EU RoHS CH ChemRRV App. 2.16(6)
Cadmium Cadmium compounds	7440-43-9	Electrical and elec- tronic equipment	0.01	yes	EU RoHS CH ChemRRV App. 2.16(6)
		Metal surface coating	n.g.	yes	EU REACH App. XVII CH ChemRRV App. 2.9, DK 2.16(2) Statutory Order No. 1199: limit value 0.0075 %
		Zinc layers	0.025		CH ChemRRV App. 2.16(3)
Mercury Mercury compounds	7439-97-6	Electrical and elec- tronic equipment	0.1	yes	EU RoHS
		All applications	n.g.	yes	CH ChemRRV App. 1.7 NL Decree 9 September 1998 SE SFS 1998:944
Hexavalent chromium (Cr <sup>VI</sup> )		Electrical and elec- tronic equipment	0.1	yes	EU RoHS CH ChemRRV App. 2.16(6)
Polybrominated biphenyls (PBBs) Polybrominated diphenyl- ethers (PBDEs)		Electrical and elec- tronic equipment	0.1	yes	EU RoHS CH ChemRRV App. 1.9
Octabromodiphenylether (OBDE) Pentabromodiphenyl- ether (PeBDE)	32536-52-0 32534-81-9	All applications	0.1		EU REACH
<b>Batteries and accumulators</b>					
Lead	7439-92-1	Fixed batteries <sup>6)</sup>	0.1	yes	CH ChemRRV App. 2.15
Cadmium	7440-43-9	Portable batteries and accumulators	0.002	yes	EU 2006/66/EC
		Zinc-carbon batteries Fixed batteries <sup>6)</sup>	0.015 0.015	yes	CH ChemRRV App. 2.15
		Mercury	7439-97-6	Batteries and accumu- lators	0.000 5
		Fixed batteries <sup>6)</sup>	0.000 5		CH ChemRRV App. 2.15
		Button cells and bat- teries composed of button cells	2		EU 2006/66/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
<b>Plastics and rubber parts, wire insulation, coats of lacquer</b>					
Polybrominated biphenyls (PBBs) Polybrominated diphenyl- ethers (PBDEs)		Electrical and elec- tronic equipment	0.1	yes	EU RoHS CH ChemRRV App. 1.9
Octabromodiphenylether (OBDE) Pentabromodiphenyl- ether (PeBDE)	32536-52-0 32534-81-9	All applications	0.1		EU REACH App. XVII
Short-chain chlorinated paraffins (C <sub>10</sub> -C <sub>13</sub> )		Sealing compounds Plastics and rubber	1.0		CH ChemRRV App. 1.2

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

Substance/ substance group	CAS No.	Affected application	Limit value (wt.%) <sup>1)</sup>	Ex- cem.	Legal regulations 2)
Lead and lead compounds		Paints and varnishings	0.01	yes	CH ChemRRV App. 2.8
Cadmium and cadmium compounds		Pigments in plastics Stabilized vinyl chloride polymers and copolymers (e.g. PVC)	0.01 0.01	yes yes	EU REACH App. XVII CH ChemRRV App. 2.9, DK 2.16(2) Statutory Order No. 1199: limit values 0.0075 %
		Paints and varnishings	0.01	yes	CH ChemRRV App. 2.8
<b>Insulating materials</b>					
Asbestos	1332-21-4 see below <sup>4)</sup>	All applications	0.1 (total)	yes	EU REACH App. XVII
			n.g.	yes	CH ChemRRV App. 1.6
Man-made vitreous (silicate) 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 including technical insulation and for ventilation systems	0.1 (total)	yes	DE ChemVerbotsV
<b>Other materials (e.g. wood)</b>					
Arsenic compounds		Wood	n.g.	yes	EU REACH App. XVII
Formaldehyd	50-00-0	Wood	0,1 ml/m <sup>3</sup> (spezielles Prüfverf.)	ja	DE ChemVerbotsV AT BGBl. Nr. 194/1990 SE KIFS 1998:8 (9, 20-27 §§)
Creosote	8001-58-9	Wood and wooden materials	n.g.	yes	EU REACH App. XVII
Pentachlorophenol (PCP) Pentachlorophenol, sodium salt Other PCP salts and compounds	87-86-5 131-52-2	All applications	0.000 5 (total)	yes	EU REACH App. XVII
<b>Coolants, insulating gases and liquids, fire extinguishing agents</b>					
CFCs and halons	see below <sup>5)</sup>	Aerosols	1.0	yes	EU 2037/2000
		Coolants	1.0	yes	US CAA (42 USC 7671 et seq.)
		Foam plastics	n.g.	yes	CH ChemRRV App. 1.4, 2.3, 2.9-12
		Cleaning agents and solvents	1.0	yes	
		Extinguishing agents	1.0	yes	
HCFCs		Use in cooling and air-conditioning devices	n.g.	yes	EU 2037/2000
FCs		Fire protection systems and fire extinguishers	n.g.		EU Regulation No. 842/2006
FCs HFCs		Non-confined direct-evaporation systems containing refrigerants	n.g.		EU Regulation No. 842/2006
		Cooling and air conditioning equipment	n.g.	yes	AT BGBl. Nr. 447/2002
FCs HFCs Sulfur hexafluoride (SF <sub>6</sub> )	2551-62-4	One component foams	n.g.	yes	EU Regulation No. 842/2006
HCFCs (C <sub>1</sub> to C <sub>3</sub> ) HBrFCs (C <sub>1</sub> to C <sub>3</sub> ) Methyl bromide	74-83-9	All applications	n.g.	yes	CH ChemRRV App. 1.4, 2.3, 2.9-12
Perfluorooctane sulfonic acid and its metal salts, halides, amides, and other derivatives including polymers (PFOS)		All applications	0.1	yes	EU REACH App. XVII

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808[15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

Substance/ substance group	CAS No.	Affected application	Limit value (wt.%) <sup>1)</sup>	Ex- cem.	Legal regulations <sup>2)</sup>
Sulfur hexafluoride (SF <sub>6</sub> )	2551-62-4	Insulating and quenching gas in electrotechnical 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
Polychlorinated biphenyls (PCBs) Polychlorinated terphenyls (PCTs) Monomethyltetrachlorodiphenylmethane (Ugilec 141) Monomethyldichlorodiphenylmethane (Ugilec 121 or 21) Monomethyldibromodiphenylmethane (DBBT)	1336-36-3	All applications	0.005 (total)	yes	EU REACH App. XVII
	61788-33-8		n.g.		CH ChemRRV App. 1.1, 2.14
	76253-60-6				
	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
Halogenated aromatic compounds		Capacitors and transformers	0,05/0,005 (mono-/polyhalogenated)		CH ChemRRV App. 2.14
<b>Packaging</b>					
Heavy metals (lead, cadmium, hexavalent chromium, mercury)		Packaging and packaging components	0.01 (total)		EU 94/62/EC CH ChemRRV App. 2.16(4)
<b>Cleaning agents</b>					
Aliphatic CHCs	s. u. <sup>3)</sup>	All applications	0.1 (total)	yes	EU REACH App. XVII CH ChemRRV App. 1.3
1,1,1-Trichloroethane Tetrachloromethane	71-55-6 56-23-5	All applications	n.g.		CH ChemRRV App. 1.4

#500000306522 #173 #M\_GORBACHEVA #PLP (V)  
#0E0 #OSRAM Index List Environment  
#2011-07-26 #for internal use  
#RL-Released  
ZTT 1849808-000-15

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

## Notes

- "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.
- Country codes according to ISO 3166
 

ChemVerbotsV	German chemicals prohibition ordinance (Chemikalienverbotsverordnung)
CAA	Clean Air Act
KIFS	Swedish National Chemicals Inspectorate's Regulations (Kemikalieinspektionens föreskrifter)
REACH	Regulation 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
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

	CAS No.		CAS No.
3) <b>Aliphatic CHCs</b>		5) <b>CFCs/Halons</b>	
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
		Bromotrifluoromethane (Halon 1301)	75-63-8
4) <b>Asbestos</b>		Dibromotetrafluoroethane (Halon 2402)	124-73-2
Aktinolite	77536-66-4	Tetrachloromethane	56-23-5
Amosite	12172-73-5	1,1,1-Trichloroethane	71-55-6
Anthophyllite	77536-67-5	Chlorodifluoromethane (R22)	75-45-6
Chrysotile	12001-29-5		
Crocidolite	12001-28-4		
Tremolite	77536-68-6		

- 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.

EN	Title English	OSRAM Index List Environment	Status & Code	Released
Additional classification			EDOS No. [Version]	ZTT 1849808 [15]
Last change		500000306522 Complete revision	Valid from	26 July 2011

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

**OSRAM Index List Environment: List of declarable substances**  
**This list contains a regularly reviewed selection of relevant hazardous substances.**  
 Stand: Juli 2011

Substance/substance group	reason	Typical applications / reference of the limit value	Limit value (% w/w)	Declaration via BOMCheck®
Lead Lead compounds		Solders, hybrid circuits, ceramics, glasses	0.1 hm	BOMCheck® (RoHS)
Cadmium Cadmium compounds		Contacts, hard and soft solders, glasses	0.01hm	BOMCheck® (RoHS, Battery Directive)
Chromium (VI) compounds		Anti-corrosion coatings	0.1 hm	BOMCheck® (RoHS)
Mercury Mercury compounds		Discharge lamps, relays, switches	0.1 hm	BOMCheck® (RoHS)
Polybrominated biphenyls (PBBs)		Flame-protected plastics in components and printed circuit boards	0.1 hm	BOMCheck® (RoHS)
Polybrominated diphenylethers (PBDEs)	Toxic, environment persistent	Flame-protected plastics in components and printed circuit boards	0.1 hm	BOMCheck® (RoHS)
Aluminosilicate Refractory Ceramic Fibres	Carcinogenic	High temperature insulation in equipment	0.1	BOMCheck® (REACH Art 33)
Zirconia Aluminosilicate Refractory Ceramic Fibres	Cacinogenic	High temperature insulation in equipment	0,1	BOMCheck® (REACH Art 33)
Boric acid	Toxic for reproduction	Glass, glass fibers, ceramics, wood, paper, paints, coatings, paints	0.1	BOMCheck® (REACH Art 33)
Disodium tetraborate, anhydrous	Toxic for reproduction	Glass, glass fibers, ceramics, Flame-protected wood, paper and Cotton	0.1	BOMCheck® (REACH Art 33)
Tetraboron disodium heptaoxide, hydrate	Toxic for reproduction	Glass, glass fibers, ceramics, Flame-protected wood, paper and Cotton	0.1	BOMCheck® (REACH Art 33)
Hexabromocyclododekane (HBCCD) 1) 2), including all major diastereoisomers: - Alpha-HBCCD - Beta-HBCCD - Gamma-HBCCD	PBT	Flame-protected plastics	0.1	BOMCheck® (REACH Art 33)
Benzyl butyl phthalate (BBP)	Toxic for reproduction	Plasticized plastics, particularly PVC	0.1	BOMCheck® (REACH Art 33)
Dibutyl phthalate (DBP) 1)	Toxic for reproduction	Plasticized plastics, particularly PVC	0.1	BOMCheck® (REACH Art 33)
Diisobutyl phthalate (DIBP)	Toxic for reproduction	Plasticized plastics, particularly PVC	0.1	BOMCheck® (REACH Art 33)
Short-chain chlorinated paraffins (C10-C13) Other chlorinated paraffins	PBT/vPvB	Plasticized and flame retarded plastics, rubber and sealing compounds	0.1	BOMCheck® (REACH Art 33)
Tris(2-chloroethyl)phosphate	Toxic for reproduction	Plasticized and flame retarded plastics, painting and rubber compounds	0.1	BOMCheck® (REACH Art 33)
Codalt dichloride	Carcinogenic and Toxic for reproduction	Blue gel in dried flowers (packaging supplement)	0.1	BOMCheck® (REACH Art 33)
Bis(tributyltin)oxide (TBTO)	PBT	Foam materials in electronics and as a biocide		BOMCheck® (REACH Art 33)
Bis(2-ethylhexyl)phthalate (diethylhexylphthalate, DEHP)	Toxic for reproduction	Plasticized plastics, particularly PVC	0.1	BOMCheck® (REACH Art 33)

EN	Title English	<b>OSRAM Index List Environment</b>	Status & Code	Released
Additional classification			EDOS No. [Version]	<b>ZTT 1849808 [15]</b>
Last change		<b>500000306522 Complete revision</b>	Valid from	<b>26 July 2011</b>

This document is not controlled in printed form and may only be copied or passed on in compliance with the regulations for information security. The current valid document version as well as the history of changes are electronically kept in the EDOS system.

Lead chromate	Toxic, environment hazard	Colored paints and coatings, corrosion control coatings	0.1	BOMCheck® (REACH Art 33)
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	Carcinogenic and toxic for reproduction	Pigment for colored plastic: PVC, polyolefins and nylon	0.1	BOMCheck® (REACH Art 33)
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	Carcinogenic and toxic for reproduction	Pigment for colored plastic: PVC, polyolefins and nylon	0.1	BOMCheck® (REACH Art 33)
Man-made mineral fibers, which are classified as carcinogenic	Carcinogenic inhalation	Thermal insulation materials	0.1	BOMCheck® (REACH Art 33)
Arsenic and Arsenic compounds	Toxic, arsenic trioxide and arsenic acid and its salts are also carcinogenic	Lead and copper alloys, metal adhesives, soft solders, glasses, semi-conductors	0.1	BOMCheck® (REACH Art 33)
Azo compounds	Release carcinogenic substances	Colored plastics	0.1 hm	-
Dimethylformamide (DMF)	Toxic for reproduction	Electrolytes in electrolyte capacitors	0.1 hm	-
Other brominated flame retardants than PBBs, PBDEs und HBCCD		Flame-protected plastics in components and printed circuit boards	0.1 hm	BOMCheck® (required by customers)
Radioactive substances, intentionally added	Radioactive	Lamp filling gas, lamp electrodes	No limit	BOMCheck® (required by customers)
Nickel, nickel compounds and nickel-based alloys in contact with skin	Different nickel compounds are carcinogenic	Metal part, Base parts, only relevant if in contact with skin during use phase, e.g. torch surface	0.1 hm	BOMCheck® (required by customers)
Beryllium Beryllium compounds		Contact and spring materials, copper alloys, high-temperature materials, ceramics, glasses	0.1 hm	BOMCheck® (required by customers)
PAH (Polycyclic aromatic hydrocarbons)	Persistent, toxic, various compounds can be carcinogenic	Plastic, Elastomers, rubber	0.1 hm	BOMCheck® (required by customers)

Threshold concentration value for declaration: 0.1 % by weight in articles (SVHC acc. REACH Art 33), otherwise for homogeneous materials (hm)