

# SAFEGUARDS

SGS CONSUMER TESTING SERVICES

ELECTRICAL & ELECTRONICS

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## LATEST ROHS EXEMPTION DEVELOPMENTS

The [Directive \(2010/122/EU\)](#) was published on 25 February 2010 in order to adapt the annex of directive 2002/95/EC. This exemption is regarding the use of cadmium in certain LEDs. Additionally the phase out of the exempted use of mercury in a plasma display application on 1 July 2010 approaches.



The latest addition to the exemption list is No. 39 introduced by directive 2010/122/EU. It deals with the allowance of cadmium use in color converting LEDs. Another important change to the exemption list will happen on 1 July 2010 when the exemption No. 36, namely the use of mercury as a cathode sputtering inhibitor in DC plasma displays will phase out.

The RoHS directive 2002/95/EC prohibits the marketing of new electrical and electronic equipment (EEE) containing more than 0.1% lead (Pb), mercury (Hg), hexavalent chromium (Cr(VI)), brominated flame retardants (PBB and PBDE) and 0.01% cadmium (Cd) in EU member states. Currently the list of exemptions covers 39 items for current production to overcome technical issues.



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Below tables will give the current list of exemptions sorted by the affected hazardous substance according to RoHS:



#### Exemptions related to Pb:

DIRECTIVE	EXEMPTION
5 (2002/95/EC)	Lead in glass of cathode ray tubes, electronic components and fluorescent tub
6 (2002/95/EC)	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 (2005/747/EC)	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).
9b (2005/717/EC)	Lead in lead-bronze bearing shells and bushes
11 (2005/747/EC)	Lead used in compliant pin connector systems.
12 (2005/747/EC)	Lead as a coating material for the thermal conduction module c-ring.
13 (2005/747/EC)	Lead and cadmium in optical and filter glass.
14 (2005/747/EC)	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 (2005/747/EC)	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages.
16 (2006/310/EC)	Lead in linear incandescent lamps with silicate coated tubes
17 (2006/310/EC)	Lead halide as radiant agent in High Intensity Discharge (HID) lamps used for professional reprography applications
18 (2006/310/EC)	Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphorus such as BSP ( $\text{BaSi}_2\text{O}_5:\text{Pb}$ ) as well as when used as speciality lamps for diazo-printing reprography, lithography, insect traps, photochemical and curing processes containing phosphorus such as SMS ( $(\text{Sr},\text{Ba})_2\text{MgSi}_2\text{O}_7:\text{Pb}$ )

(to be continued)

*(continued)*

DIRECTIVE	EXEMPTION
19 (2006/310/EC)	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 (2006/310/EC)	Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCD)
21 (2006/691/EC)	Lead and cadmium in printing inks for the application of enamels on borosilicate glass.
22 (2009/428/EC)	Lead as impurity in RIG (rare earth iron garnet) Faraday rotators used for fibre optic communication systems until 31 December 2009 <sup>1</sup> .
23 (2006/691/EC)	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 (2006/691/EC)	Lead in solders for the soldering to machine through hole discoidal and planar array ceramic multilayer capacitors.
25 (2006/691/EC)	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 (2006/691/EC)	Lead oxide in the glass envelope of Black Light Blue (BLB) lamps.
27 (2006/691/EC)	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. <sup>1</sup>
29 (2006/690/EC)	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.)
31 (2008/385/EC)	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting).
32 (2008/385/EC)	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes.
33 (2009/443/EC)	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers.
34 (2009/443/EC)	Lead in cermet-based trimmer potentiometer elements.
37 (2009/443/EC)	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body.

<sup>1</sup> Exemption acc. 2006/691/EC replaced by 2009/428/EC of 04. JUN. 2009

**Exemptions related to Cd:**

DIRECTIVE	EXEMPTION
8 (2005/747/EC)	Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC amending Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations.
13 (2005/747/EC)	Lead and cadmium in optical and filter glass.
21 (2006/691/EC)	Lead and cadmium in printing inks for the application of enamels on borosilicate glass.
30 (2008/385/EC)	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.
35 (2009/443/EC)	Cadmium in photoresistors for optocouplers applied in professional audio equipment until 31 December 2009.
38 (2009/443/EC)	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide
39 (2010/122/EU)	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 until 1 July 2014.

**Exemptions related to Hg:**

DIRECTIVE	EXEMPTION
1 (2002/95/EC)	Mercury in compact fluorescent lamps not exceeding 5 mg per lamp.
2 (2002/95/EC)	Mercury in straight fluorescent lamps for general purposes not exceeding. <ul style="list-style-type: none"> <li>• halophosphate 10 mg</li> <li>• triphosphate with normal lifetime 5 mg</li> <li>• triphosphate with long lifetime 8 mg</li> </ul>
3 (2002/95/EC)	Mercury in straight fluorescent lamps for special purposes.
4 (2002/95/EC)	Mercury in other lamps not specifically mentioned in this Annex.
36 (2009/443/EC)	Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display until 1 July 2010.

**Exemptions related to Cr(VI) :**

DIRECTIVE	EXEMPTION
9 (2002/95/EC)	Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators.
28 (2006/692/EC)	Hexavalent chromium in corrosion preventive coatings of unpainted metal sheetings and fasteners used for corrosion protection and Electromagnetic Interference Shielding in equipment falling under category three of Directive 2002/96/EC (IT and telecommunications equipment). Exemption granted until 1 July 2007.

**Exemptions related to PBB/PBDE :**

DIRECTIVE	EXEMPTION
9a (2005/717/EC)	DecaBDE in polymeric applications (overruled by European Court of Justice on 01.04.2008) <sup>2</sup>

SGS will follow up and keep you informed about exemption surveillance analysis in consumer products as a complementary service. We can help you to control the risks.

Through our global network of laboratories, we enable to provide a range of services, including analytical testing and consultancy work for technical and non-technical parameters in a comprehensive range of consumer products in chemical field for the worldwide. Please do not hesitate to contact us for further information.



<sup>2</sup> Acc. directive 2005/717/EC, Annex, Point 2 DecaBDE is exempted from the requirements of directive 2002/95/EC, Article 4, Paragraph 1 in polymeric application. This exemption was overruled by the European Court on Justice on 01. Apr. 2008. The use of DecaBDE is prohibited after 01. Jul. 2008.

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