

Adaptation to Scientific and Technical Progress under Directive 2002/95/EC- Evaluation of new requests for exemptions and/or review of existing exemptions

Project Description

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Table of contents

1	Background & Objectives	1
2	Scope	2
3	Project set-up	6
4	Time schedule	7

1 Background & Objectives

Article 4(1) of Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (“RoHS Directive”) provides “that from 1 July 2006, new electrical and electronic equipment put on the market does not contain lead, mercury, cadmium, hexavalent chromium, PBB or PBDE.” The Annex to the Directive lists a limited number of applications of lead, mercury, cadmium and hexavalent chromium, which are exempted from the requirements of Article 4(1) and are subject to technical and scientific progress.

Article 5(1)(b) of the Directive provides that materials and components can be exempted from the substance restrictions contained in Article 4(1) if their elimination or substitution via design changes or materials and components which do not require any of the materials or substances referred to therein is technically or scientifically impracticable, or where the negative environmental, health and/or consumer safety impacts caused by substitution outweigh the environmental, health and/or consumer safety benefits thereof.

On the basis of this provision the Commission is receiving requests for applications to be exempted from the requirements of the Directive. These requests need to be evaluated in order to assess whether they fulfil the above mentioned requirements of Article 5(1)(b). Where the requirements are fulfilled the Commission can propose a draft decision amending the Annex to the RoHS Directive.

Furthermore, based on Article 5(1)(c), the Commission shall carry out a review of each exemption listed in the Annex at least every four years or four years after an item is added to the list, i.e. the deletion of materials and components of electrical and electronic equipment from the existing Annex has to be considered if their elimination or substitution is possible with regard to the criteria listed in Article 5(1)(b) (see above). Hence, any request for the review of existing exemptions which may be received by the Commission will also need to be assessed.

In addition, the Commission has adopted a proposal on the revision of the RoHS Directive¹ which includes proposed changes concerning the exemption mechanism. In case of adoption these will have to be taken into account during the project.

Against this background the Commission has contracted Öko-Institut together with Fraunhofer IZM in view of technical assistance for both, the evaluation of requests for exemptions submitted according to Article 5(1)(b) and for the evaluation of existing exemptions according to Article 5(1)(c). Furthermore, the consultation with stakeholders on the review of the Annex

¹ COM(2008) 809 final 2008/0240 (COD);
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0809:FIN:EN:PDF>

according to Article 5(2) shall be carried out and - where applicable - the suggestion for a final wording for the exemption shall be provided.

Summarising the above the objectives of this project can be outlined as follows:

- Execute a clear technical and scientific assessment on whether requests for new exemptions are justified in line with the criteria given in Article 5(1)(b);
- If requested, perform a detailed review of certain existing exemptions listed in the Annex of the RoHS Directive based on the criteria for exemptions in Article 5(1)(b);
- Agree on a list of exemption requests and existing exemptions (8 – 10) with the Commission and update it throughout the project;
- Provide a dedicated website which ensures that involved stakeholders will receive all necessary information and can contribute to online consultations (<http://rohs.exemptions.oeko.info>);
- Provide the involvement and consultation of stakeholders (inter alia producers of electrical and electronic materials, components and equipment, recyclers, treatment operators, environmental organisations, employee and consumer associations), according to Article 5(2);
- Provide a clear and unambiguous wording for the preparation of a Draft Commission Decision for those exemptions where on the basis of the result of the consultation (according to Article 5(2)) and the assessment following the criteria given in Article 5(1)(b) an exemption can be justified.

2 Scope

Table 1 below lists existing exemptions representing part of the scope of this forthcoming contract. Furthermore, new exemption requests not yet known will be evaluated too.

Table 1 Overview on existing exemptions listed in the RoHS Directive's Annex

No.	Topic	Type	Date
1	Mercury in compact fluorescent lamps not exceeding 5 mg per lamp	Original	27.01.2003
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	Original	27.01.2003
3	Mercury in straight fluorescent lamps for special purposes	Original	27.01.2003
4	Mercury in other lamps not specifically mentioned in this Annex	Original	27.01.2003
5	Lead in glass of cathode ray tubes, electronic components and fluorescent tubes	Original	27.01.2003
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	Original	27.01.2003
7	<ul style="list-style-type: none"> ▪ 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)² 	Replaced	21.10.2005
8	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. (*) OJ L 186, 12.7.1991, p. 59. (**) OJ L 262, 27.9.1976, p. 201. ³	Replaced	21.10.2005
9	Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators	Original	27.01.2003
9a	DecaBDE in polymeric applications	Added	13.10.2005
9b	Lead in lead-bronze bearing shells and bushes	Added	13.10.2005

² Original 27 Jan 2003:

- Lead in high melting temperature type solders (i.e. tin-lead solder alloys containing more than 85 % lead),
- lead in solders for servers, storage and storage array systems (exemption granted until 2010),
- lead in solders for network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunication,
- lead in electronic ceramic parts (e.g. piezoelectronic devices).

³ Original 27 Jan 2003: Cadmium plating except for applications banned under Directive 91/338/EEC (*) amending Directive 76/769/EEC (**) (*) OJ L 186, 12.7.1991, p. 59. (**) OJ L 262, 27.9.1976, p. 201.

No.	Topic	Type	Date
10	(Entry no. 10 of the Annex does not contain a wording for an exemption but rather a reference to an evaluation the Commission shall do according to Article 7 (2) and is therefore not cited here.)		
11	Lead used in compliant pin connector systems.	Added	21.10.2005
12	Lead as a coating material for the thermal conduction module c-ring.	Added	21.10.2005
13	Lead and cadmium in optical and filter glass.	Added	21.10.2005
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.	Added	21.10.2005
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages.	Added	21.10.2005
16	Lead in linear incandescent lamps with silicate coated tubes.	Added	21.04.2006
17	Lead halide as radiant agent in High Intensity Discharge (HID) lamps used for professional reprography applications.	Added	21.04.2006
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 ($\text{BaSi}_2\text{O}_5:\text{Pb}$) as well as when used as speciality lamps for diazo-printing reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ($(\text{Sr},\text{Ba})_2\text{MgSi}_2\text{O}_7:\text{Pb}$).	Added	21.04.2006
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).	Added	21.04.2006
20	Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCD).	Added	21.04.2006
21	Lead and cadmium in printing inks for the application of enamels on borosilicate glass.	Added	12.10.2006
22	Lead as impurity in RIG (rare earth iron garnet) Faraday rotators used for fibre optic communications systems until December 2009.	Amended	04.06.2009
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.	Added	12.10.2006
24	Lead in solders for the soldering to be machined through hole discoidal and planar array ceramic multilayer capacitors.	Added	12.10.2006

No.	Topic	Type	Date
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.	Added	12.10.2006
26	Lead oxide in the glass envelope of Black Light Blue (BLB) lamps.	Added	12.10.2006
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.	Added	12.10.2006
28	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 ⁴ .	Added	12.10.2006
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.	Added	12.10.2006
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.	Added	24.01.2008
31	Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	Added	24.01.2008
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes.	Added	24.01.2008
33	Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers.	Added	10.06.2009
34	Lead in cermet-based trimmer potentiometer elements.	Added	10.06.2009
35	Cadmium in photoresistors for optocouplers applied in professional audio equipment until 31 December 2009.	Added	10.06.2009
36	Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display until 1 July 2010.	Added	10.06.2009

⁴ Exemption granted until 1 July 2007.

No.	Topic	Type	Date
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body.	Added	10.06.2009
38	Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide.	Added	10.06.2009

Currently, one new exemption request is under evaluation (cf. <http://rohs-elv.exemptions.oeko.info/index.php?id=25>) and will possibly lead to a further amendment of the Annex. Furthermore, the Commission is preparing a new proposal of the RoHS Annex based on the 2008 revision of the Annex (29 exemptions by the time) as well as 5 new exemption requests (cf. <http://rohs.exemptions.oeko.info/index.php?id=73>). This will lead to a further amendment of the Annex by approximately mid 2010.

3 Project set-up

The overall project is lead by Stéphanie Zangl. At Fraunhofer IZM the contact person is Otmar Deubzer. The evaluation of the exemptions will be performed in close co-operation with the European Commission and stakeholders (electrical and electronic industry and its associations, NGOs, independent experts etc.). This includes:

- Central communication access for stakeholders via the project-specific e-mail account rohs.exemptions@oeko.de.
- Project-specific website on <http://rohs.exemptions.oeko.info/> where relevant documents and project activities will be published
- Information of stakeholders via website and via mailing lists for which stakeholder can register.
- Preparation and management of stakeholder consultations on the review of existing and new exemptions via project website.
- Technical and scientific evaluation of stakeholder input and further procedure for receiving a sound basis with a high level quality of data and information and for cross-checking information for technical correctness and confidentiality issues.
- Stakeholder workshop or meetings if appropriate.

4 Time schedule

Assignment of project tasks to Öko-Institut and Fraunhofer IZM started 27 November 2009 and will run over a period of 18 months, thus ending 26 May 2011. Progress reports are to be delivered to the European Commission 4 months after submission of an exemption for assessment to the contractor. The interim report is due 30 May 2010, followed by a draft final report due 30 April 2011.

The first stakeholder consultation will start early 2010.

If a stakeholder workshop is appropriate it will take place in July 2010. If applicable, details on the scope, addressed stakeholders and organisation will be published on the project website.