

**Study to assess renewal requests for 29 RoHS 2
Annex III exemptions [no. 1(a to e - lighting purpose),
no. 1(f - special purpose), no. 2(a), no. 2(b)(3), no.
2(b)(4), no. 3, no. 4(a), no. 4(b), no. 4(c), no. 4(e), no.
4(f), no. 5(b), no. 6(a), no. 6(b), no. 6(c), no. 7(a), no.
7(c) - I, no. 7(c) - II, no. 7(c) - IV, no. 8(b), no. 9, no. 15,
no. 18b, no. 21, no. 24, no. 29, no. 32, no. 34, no. 37]**

Project Description Pack 9 – 2015

**Oeko-Institut e.V. - Institute for Applied Ecology,
Germany (Project Management, Partner)**

Carl-Otto Gensch

Yifaat Baron

Markus Blepp

Katja Moch

Susanne Moritz

**Fraunhofer Institute for Reliability and
Microintegration IZM (Partner)**

Dr. Otmar Deubzer

Eunomia Research & Consulting (Peer Review)

Adrian Gibbs

**Oeko-Institut e.V.
Freiburg Head Office**

P.O. Box 17 71
79017 Freiburg, Germany

Street Address
Merzhauser Str. 173
79100 Freiburg

Phone +49 (0) 761 – 4 52 95-0
Fax +49 (0) 761 – 4 52 95-288

Darmstadt Office

Rheinstr. 95
64295 Darmstadt, Germany
Phone +49 (0) 6151 – 81 91-0
Fax +49 (0) 6151 – 81 91-133

Berlin Office

Schicklerstr. 5-7
10179 Berlin, Germany
Phone +49 (0) 30 – 40 50 85-0
Fax +49 (0) 30 – 40 50 85-388

Table of contents

1	Background	1
2	Objectives	1
3	Scope	2
4	Project set-up	5
5	Time schedule	5

1 Background

The RoHS Directive (2002/95/EC) (RoHS 1) has been recasted and has now become Directive 2011/65/EU that entered into force on 21 July 2011, repealing Directive 2002/95/EC on 3 January 2013. The RoHS Directive (2011/65/EU) on the restriction of the use of certain hazardous substances in electrical and electronic equipment requires “that EEE placed on the market, including cables and spare parts for its repair, its reuse, updating of its functionalities or upgrading of its capacity, does not contain the substances listed in Annex II” (i.e. lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers). These provisions “shall not apply to the applications listed in Annexes III and IV” (Article 4). These Annexes are to be adapted to scientific and technical progress on the basis of the provisions listed in Article 5.

With the contract No. ENV/2015/SI2.708088/ETU/A2 Implementing Framework Contract No. ENV.C.2/FRA/2011/0020, a consortium led by Eunomia Research & Consulting has been requested by DG Environment of the European Commission to provide technical and scientific support for the evaluation of exemption requests under the new RoHS 2 regime. The work is being undertaken by the Oeko-Institut and Fraunhofer IZM and shall be peer reviewed by Eunomia Research & Consulting. The work has been requested in view of providing technical and scientific support for the evaluation of applications for granting, renewing or revoking an exemption to be included in or deleted from Annexes III and IV of the new RoHS Directive 2011/65/EU (RoHS 2).

2 Objectives

The objectives of this project can be outlined as follows:

- 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>);
- 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)(a);
- Provide for 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(7);
- 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 and the evaluation, an exemption can be justified.

3 Scope

The scope of the current consultation concerns the review of twenty nine exemptions as shown in Table 1 below. The evaluation of the requests for renewal (or amendment) of these existing exemptions has been commissioned through the project “Pack 9”. In some cases multiple stakeholders have requested the renewal (or amendment) of a specific exemption as is shown below.

Where application requests did not meet the minimum requirements as specified under Annex V of Directive 2011/65/EU, they shall not be evaluated as such. The submitting stakeholders (applicants) of such requests shall still be able to participate in the stakeholder consultation.

Table 1 gives an overview on the exemptions to be evaluated, covering the use of cadmium, hexavalent chromium, lead and mercury in the relevant applications.

Table 1 Exemption requests that will be evaluated during this project in order of date of submission.

Exemption No.	Annex III formulation	Applicant
1 (a-e)	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner): (a) For general lighting purposes < 30 W: 2,5 mg may be used after 31.12.2012 (b) For general lighting purposes ≥ 30 W and < 50 W: 3,5 mg may be used after 31.12.2011 (c) For general lighting purposes ≥ 50 W and < 150 W: 5 mg (d) For general lighting purposes ≥ 150 W: 15 mg (e) For general lighting purposes with circular or square structural shape and tube diameter ≤ 17 mm: 7 mg may be used after 31.12.2011	NARVA Lichtquellen GmbH + Co. KG
		LightingEurope
1 (f)	Mercury in single capped (compact) fluorescent lamps not exceeding (per burner): (f) For special purposes: 5 mg	NARVA Lichtquellen GmbH + Co. KG
		LightingEurope
2(a)(1-5)	Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp): (1) Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 4 mg may be used after 31.12.2011 (2) Tri-band phosphor with normal lifetime and a tube diameter ≥ 9 mm and ≤ 17 mm (e.g. T5): 3 mg may be used after 31.12.2011 (3) Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and ≤ 28 mm (e.g. T8): 3,5 mg may be used after 31.12.2011 (4) Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 3,5 mg may be used after 31.12.2012 (5) Tri-band phosphor with long lifetime (≥ 25 000 h): 5 mg may be used after 31.12.2011	NARVA Lichtquellen GmbH + Co. KG
		LightingEurope
2(b)(3)	Mercury in other fluorescent lamps not exceeding (per lamp): (3) Non-linear tri-band phosphor lamps with tube diameter > 15 mm (e.g. T9): 15 mg may be used after 31.12.2011	NARVA Lichtquellen GmbH + Co. KG
		LightingEurope
2(b)(4)	Mercury in other fluorescent lamps not exceeding (per lamp): (4) Lamps for other general lighting and special purposes	LightingEurope

Exemption No.	Annex III formulation	Applicant
	(e.g. induction lamps): 15 mg may be used after 31.12.2011	
3 (a-c)	Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp): (a) Short length (≤ 500 mm): 3,5 mg may be used after 31.12.2011 (b) Medium length (> 500 mm and $\leq 1\ 500$ mm): 5 mg may be used after 31.12.2011 (c) Long length ($> 1\ 500$ mm): 13 mg may be used after 31.12.2011	LightingEurope
4(a)	Mercury in other low pressure discharge lamps (per lamp): 15 mg may be used after 31.12.2011	NARVA Lichtquellen GmbH + Co. KG LightingEurope
4(b)(I-III)	Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index $R_a > 60$: I) $P \leq 155$ W: 30 mg may be used per burner after 31.12.2011 II) 155 W $< P \leq 405$ W: 40 mg may be used per burner after 31.12.2011 III) $P > 405$ W: 40 mg may be used per burner after 31.12.2011	LightingEurope
4(c)(I-III)	Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner): I) $P \leq 155$ W: 25 mg may be used per burner after 31.12.2011 II) 155 W $< P \leq 405$ W: 30 mg may be used per burner after 31.12.2011 III) $P > 405$ W: 40 mg may be used per burner after 31.12.2011	LightingEurope
4 (e)	Mercury in metal halide lamps (MH)	LightingEurope
4(f)	Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	VskE Lighting Europe VDMA
5(b)	Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	Lighting Europe
6(a)	Lead as an alloying element in steel for machining purposes and in galvanised steel containing up to 0,35 % lead by weight	Dunkermotoren; Carsten Lang, Carsten.Lang@ametec.com; 00497703930177 The European Steel Association (EUROFER) and European General Galvanizers Association (EGGA) Sensata Technologies
6(b)	Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	AISBL - EAA Sensata Technologies Dunkermotoren
6(c)	Copper alloy containing up to 4 % lead by weight	Bourns Inc. Dunkermotoren Framo Morat Group Sensata Technologies Phoenix Contact GmbH & Co KG; Harting KGaA Lighting Europe

Exemption No.	Annex III formulation	Applicant
7(a)	Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)	Bourns Inc.
		IXYS Semiconductor GmbH
		Freescale Semiconductor
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	Bourns Inc.
		Sensata Technologies
		YAGEO Corporation
		BANDELN electronic GmbH&Co.KG
		RALEC TECHNOLOGY (KUNSHAN) CO.
		Japan Electronics & Information Technology Industries Association
		Murata Elektronik GmbH; EPCOS AG; VISHAY BC components BEYSCHLAG GmbH
SCHOTT AG		
7(c)-II	Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	Murata Elektronik GmbH; EPCOS AG; VISHAY BC components BEYSCHLAG GmbH ¹
7(c)-IV	Lead in PZT based dielectric ceramic materials for capacitors which are part of integrated circuits or discrete semiconductors	ST Microelectronics
8(b)	Cadmium and its compounds in electrical contacts	Sensata Technologies
		National Electrical Manufacturers Association
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	Dometic
15	Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	Intel Corporation
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 2 O 5 :Pb)	NARVA Lichtquellen GmbH + Co. KG
		Lighting Europe
21	Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	LightingEurope
24	Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	Knowles
29	Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC (1)	EUROPEAN DOMESTIC GLASS and LightingEurope
32	Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	Coherent Inc.
		JDSU
34	Lead in cermet-based trimmer potentiometer elements	General Electric
37	Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	IXYS Semiconductor GmbH
		General Electric

¹ Request is further supported by JEITA et al. (Japan Electronics & Information Technology Industries Association) through their exemption request for Ex. 7(c)-I

4 Project set-up

The overall project is led by Carl-Otto Gensch. At Fraunhofer IZM the contact person is Otmar Deubzer. The project team at Oeko-Institut consists of the technical experts Yifaat Baron, Markus Blepp and Katja Moch, and shall be assisted by Susanne Moritz.

The exemption evaluation 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 at <http://rohs.exemptions.oeko.info/> where relevant documents and project activities will be published;
- Information for stakeholders via website and via mailing lists for which stakeholders can register;
- Preparation and management of stakeholder consultations on new exemption requests 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 where necessary.

5 Time schedule

Assignment of project tasks to Oeko-Institut and Fraunhofer IZM started 10 June and will run over a period of 9 months, thus ending 09 March 2016. An interim report shall be delivered to the European Commission in September. The final report is due at the end of the project.

The stakeholder consultation is planned to start in August 2015. If a stakeholder workshops are appropriate they will take place in Fall 2015 or in Winter 2016.