

## Study to support the review of the list of restricted substances and to assess a new exemption request under RoHS 2

**RoHS Pack 15**

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### Project Description

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## 1. Background

The key provisions of the RoHS Directive (Directive 2011/65/EU) can be found in Article 4(1), requiring Member States to ensure that electrical and electronic equipment (EEE) placed on the market, including cables and spare parts, does not contain the substances listed in Annex II (restricted substances) in excess of the maximum tolerated value in the homogeneous material. The directive annex initially listed the following substances: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers.

Article 5(1)(a) provides a basis for excluding certain applications from these provisions through the inclusion of materials and components of EEE for specific applications in the lists in Annexes III and IV, i.e. through exemptions to the substance restrictions. This article further specifies the criteria on which such exemptions can be justified

Article 6 of RoHS 2 requires that the list of restricted substances in Annex II be reviewed periodically and stipulates rules for amending the list. On the basis of this article, a methodology was developed for substance assessment and a number of substances were evaluated for possible restriction in the years 2012-2014. As a result the four phthalates were added to Annex II and shall need to be restricted in EEE starting July 2019: dibutyl phthalate (DBP), bis(2-ethylhexyl)phthalate (DEHP), diethyl phthalate (DEP) and diisobutyl phthalate (DIBP).

With contract No. 07.0201/2017/772070/ENV.B.3 implementing Framework Contract No. ENV.A.2/FRA/2015/0008, a consortium led by Oeko-Institut for Applied Ecology, has been assigned by DG Environment of the European Commission to provide technical and scientific support for the review of the list of restricted substances and to assess a new exemption request under RoHS 2. The work is being undertaken by the Oeko-Institut and Fraunhofer IZM. The work has been requested in view of providing technical and scientific support for the following tasks, to be elaborated on in the following chapters:

- Part 1: Substance restriction:
  - Task 1: Update the existing methodology to identify and assess substances for possible restriction;
  - Task 2: Assess substances with a view to their possible future restriction;
  - Task 3: Determination of the quantitative usage data for substances used in EEE;
- Part 2: Exemption evaluation:
  - Task 4: Exemption methodology
  - Task 5: Exemption assessment

In the course of the project and as a horizontal task (Task 6) stakeholders shall be consulted among others in the form of stakeholder consultation.

## 2. Objectives

The objectives of this project can be outlined as follows:

- Part 1: Substance restriction:
  - Update of the existing methodology to identify and assess substances based on the criteria in Recital 10 and Article 6(1) and 6(2). The updated methodology shall not include or imply provisions other than those listed in Article 6. The methodology should also explain the link with methodological guidelines on exemptions, developed under the part 2 below.
  - Detailed assessment in line with the updated methodology of seven substances, in the form of a substance dossier. This exercise shall include an assessment of impacts in case of a possible restriction.
  - Determination of the quantitative usage data for a list of prioritized substances used in EEE or where this is not possible, of a magnitude ranking, with a view to a refined prioritisation for future restriction review cycles.
- Part 2: Exemption evaluation:
  - Update of the existing methodology for the decision on exemption applications pursuant to the criteria in Article 5(1), by also taking consideration of methods applied in previous exemption evaluations performed under the provisions of the RoHS Directive. On the basis of the life cycle analysis methodology, the methodology shall provide guidance on the comparison of quantified impacts in cases where an exemption is justified on the basis of the third Article 5(1)(a) third criteria<sup>1</sup>. For example such guidance shall be developed for cases where the use of a RoHS substance based application results in positive environmental impacts stemming from energy efficiency gains or from the use of recycled materials, in comparison to alternatives.
  - Evaluating an exemption request for the use of cadmium in luminescent material for on-chip application on LED semiconductor chips.

Stakeholder consultations shall also be performed in the course of the study in order to fulfil the above objectives.

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<sup>1</sup> Article 5(1)(a), third criteria: “The total negative environmental, health and consumer safety impacts caused by substitution are likely to outweigh the total environmental, health and consumer safety benefits thereof.”

### 3. Scope

In agreement with the Commission, the scope for the various tasks has been determined as specified in Table 1 below.

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

Task	Description	Details
<i>Part 1: Substance restriction:</i>		
Task 1	In the course of this task an update of the Austrian Umweltbundesamt (AUBA) Draft Manual Methodology for Identification and Assessment of Substances for Inclusion in the List of Restricted Substances (Annex II) under the RoHS 2 Directive <sup>2</sup> , shall be performed.	
Task 2	The assessment of substances in this task shall be based on the revision of the assessment methodology and the dossier template proposed by the Austrian Umweltbundesamt in 2013. The revision shall be performed in the course of Task 1. The seven substances specified in the third column shall be assessed in the course of this task. The substances appear as specified in the project terms of reference.	Diantimony trioxide (flame retardant) Tetrabromobisphenol A (TBBP-A, flame retardant) Indium phosphide (InP) Medium chain chlorinated paraffins (MCCPs) - Alkanes, 14-17, chloro Beryllium and its compounds Nickel sulphate and nickel sulfamate Cobalt dichloride and cobalt sulphate
Task 3	This task shall produce quantitative usage data for the prioritized substances of the substance inventory to be developed in Task 1.	
<i>Part 2: Exemption evaluation</i>		
Task 4	A methodology guidance shall be developed on the basis of the methodology approach applied by Oeko-Institut and Fraunhofer IZM in the evaluation of exemptions assessed under the RoHS 2 regime.	
Task 5	One request for exemption shall be evaluated in the course of this task. The requested exemption is specified in the third column. It appears as specified in the project terms of reference.	Cadmium in luminescent material for on-chip application on LED semiconductor chips

### 4. Project set-up

The overall project is led by Carl-Otto Gensch. The project team consists of the technical experts Yifaat Baron, Markus Blepp and Katja Moch. At Fraunhofer IZM the contact person is Otmar Deubzer and Christian Clemm completes the project team.

The tasks 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](mailto:rohs.exemptions@oeko.de);

<sup>2</sup> AUBA (2013), Draft Manual Methodology for Identification and Assessment of Substances for Inclusion in the List of Restricted Substances (Annex II) under the RoHS 2 Directive, Prepared by the Environment Agency of Austria Umweltbundesamt GmbH in the framework of the Study for the Review of the List of Restricted Substances under RoHS 2; Reference: ENV.C.2/ETU/2012/0021

- 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 in relation to the various tasks 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;
- Preparation and moderation of stakeholder workshops or meetings in relation to the various tasks.

## 5. Time schedule

Assignment of project tasks to Oeko-Institut and Fraunhofer IZM started 29 December 2017 and will run over a period of 18 months, thus ending 28 June 2019. Three interim reports shall be submitted to the European Commission throughout the project.

Stakeholder consultations and stakeholder meetings are planned in relation to the various tasks and shall be announced on the Pack 15 project page of the RoHS website.