

Consultation Questionnaire Exemption No. 4a (renewal request)

Exemption for *„Mercury in other low pressure discharge lamps (per lamp) – 15 mg may be used per lamp after 31 December 2011”*

Abbreviations and Definitions

Hg	Mercury
LEU	LightingEurope
NARVA	NARVA Lichtquellen GmbH + Co. KG
UVC	Radiation that is in the C region of the Ultra-Violet spectrum, extending from 100-280nm in wavelength.

Background

The Oeko-Institut and Fraunhofer IZM have been appointed within a framework contract¹ for the evaluation of applications for the renewal of exemptions currently listed in Annexes III of the new RoHS Directive 2011/65/EU (RoHS 2) by the European Commission.¹

The following applicants have submitted requests for the renewal of the above mentioned exemption.

- NARVA Lichtquellen GmbH + Co. KG (NARVA) requests the exemption be renewed with the same wording.
- Lighting Europe (LEU) requests a modification of the current exemptions wording as follows: *“Mercury in other low pressure non-phosphor coated discharge lamps not to exceed 15 mg per lamp”*.

Both request the maximum duration to be provided for the exemption.

The applications have been subject to a first completeness and plausibility check. The applicants have been requested to answer additional questions and to provide additional information, available on the request webpage of the stakeholder consultation (<http://rohs.exemptions.oeko.info/index.php?id=228>).

Lighting Europe explain that the current Exemption 4(a) formulation leaves room for interpretation as to which lamp types are included in its scope. Their application details what low pressure lamps are understood to fall under the scope of other Annex III exemptions, and on this basis LEU concludes that lamps falling under the scope of Ex. 4a are low pressure gas discharge lamps which emit UVC radiation and which are characterized by not having a phosphor coating. LUE proposes an amendment of the exemption formulation to reflect its applicability for such lamps and provides the following wording for this purpose:

¹ Contract is implemented through Framework Contract No. ENV.C.2/FRA/2011/0020 led by Eonomia

“Mercury in other low pressure non-phosphor coated discharge lamps not to exceed 15 mg per lamp.”

According to LEU, such lamps are produced with similar manufacturing techniques as fluorescent lamps, but are used in highly specific applications to produce light in the ultra-violet C (UVC) region. *“The lamps are not phosphor coated and do not produce visible light nor are they intended for illumination purposes. Unlike general visible lighting lamps or specialty lighting lamps which may be produced with soda-lime glass, which intentionally block UVC transmission, these lamp types will allow the transmission of light in the deep UVC region of 185-254nm. The practical uses of these lamps are for ultraviolet germicidal or bacterial disinfection of: fluids such as drinking water; waste water; water for food, beverage, pharmaceutical preparation; aquaculture; fish farming; semiconductor manufacturing; surface disinfection; air disinfection. The lamps are installed in equipment for industrial, commercial and residential applications and the use of these are growing as they have been accepted by Environmental Agencies worldwide to kill many forms of bacteria including but not limited to giardia and cryptosporidia. These low pressure gas discharge lamp types can be T5, T6, T8, T10 and T12, which are industry standards, but can also include other tubular lamp types outside dimensions or compact Hg discharge lamp shapes like single ended bended or bridged 2, 4, or 6 legged lamps. Due to their highly specialized use the lamps may be double ended with standard lighting end caps or may be single ended with standard or custom end cap configurations. Lamps may also be made in custom sizes and lengths and power levels. Power ranges for these lamp types can vary from 1W to 1000W and are typically dimmed in operation. The operating environment of these lamps varies greatly. The operating temperature range can potentially be 0° C to 100° C. They may be operated directly in air, in a sleeve in air, or in a sleeve in water. Thermal control may become a necessity for these lamp types especially in higher powered lamp types.”*

LEU explains that lamps in the scope of exemption 4(a) have a mercury content from < 4 mg and up to 15 mg, thus requiring an exemption to allow their placement on the market beyond 2016, at which time the exemption is expected to expire, should a renewal not be granted.

LEU claim that at present *“there is no available LED that can produce light in the 185-254nm range of the UVC spectrum or other lighting technology that may use less mercury, or can be used as a substitute for these lamps...There are UVC producing LEDs... which are in the early stages of development and use, at the higher wavelengths of the UVC spectrum i.e. 365-405nm, however these would not perform the same germicidal function as the lamps covered under this request. It is estimated by the LED manufacturers that deep UVC LEDs will not be available for five to ten years due to the high power and long life requirements that are available with low pressure gas discharge lamps.”*

NARVA does not provide additional details in its application regarding the lamps covered under Ex. 4a. The renewal is requested with the current wording and it is yet to be understood what type of applications NARVA interprets to fall under the current scope of the exemption.

For details, please check the applicant's exemption requests at:

<http://rohs.exemptions.oeko.info/index.php?id=235>

The objective of this consultation and the review process is to collect and to evaluate information and evidence according to the criteria listed in Art. 5 (1) (a) of Directive 2011/65/EU (RoHS II), which can be found under:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32011L0065:EN:NOT>

If you would like to contribute to the stakeholder consultation, please answer the following questions:

Questions

1. The applicants have requested the renewal of Exemption No. 4a of Annex III, however proposing a number of alternative wording formulations (possible amendments) as follows: NARVA has requested the renewal of Ex. 4a with the same wording formulation. LEU has proposed the following wording formulation: “*Mercury in other low pressure non-phosphor coated discharge lamps not to exceed 15 mg per lamp*”
 - a. Do you agree with one of the proposed formulations? Please detail which of them would be appropriate.
 - b. Please suggest an alternative wording and explain your proposal, if you do not agree with the proposed exemption wording.
 - c. Please explain why you either support or object to the various proposals. To support your views, please provide detailed technical argumentation / evidence in line with the criteria in Art. 5(1)(a).
2. LEU’s exemption formulation proposal would limit the exemption to low pressure discharge lamps which do not have phosphor coating. However, LEU’s request also clarifies that their members only make use of Ex. 4a to place UVC lamps on the market.
 - a. Please state if the exemption formulation could further be amended to limit its application to low pressure discharge lamps producing light in the 185-254nm wavelength range.
 - b. If you object to this limitation please explain on what basis and provide argumentation to support your view.
3. Please provide information concerning possible substitutes or developments that may enable reduction, substitution or elimination, at present or in the future, of Hg in low pressure discharge lamps producing light in the 185-254nm wavelength range, or of other lamps interpreted to fall under the scope of Ex. 4a at present.
 - a. In this regard, please provide information as to alternatives that may cover part or all of the applicability range of lamps falling under Ex. 4a;
 - b. For each possible alternative, please state:
 - i. if it can be used as a drop-in replacement in existing installations; or
 - ii. if technical adjustments would be needed in the installation to allow such a replacement; or
 - iii. if the alternative can only be used in installations designed especially for its use;
 - c. Please provide quantitative data as to application specifications to support your view.
4. Please provide information as to research initiatives which are currently looking into the development of possible alternatives for some or all areas of application of lamps falling under Ex. 4a.
 - a. Please explain what part of the application range is of relevance for such initiatives (for what kind of applications substitution will be possible in the future and at what time).

- b. Please provide a roadmap of such on-going research (phases that are to be carried out), detailing the current status as well as the estimated time needed for further stages:
 - i. An estimated time or time range should be provided for each stage along with a short explanation stating the reason why the estimated time is needed;
 - ii. Where relevant, it should be stated what stages could run in parallel and what stages need to take place on a linear basis.

5. Are there any other aspects you deem to be of importance for the requested exemption?

In case parts of your contribution are confidential, please clearly mark relevant text excerpts or provide your contribution in two versions (public /confidential).

Finally, please do not forget to provide your contact details (Name, Organisation, e-mail and phone number) so that Oeko-Institut/Fraunhofer IZM can contact you in case there are questions concerning your contribution. Please also note, however, that requested exemptions cannot be granted based on confidential information!