

Frequently Asked Questions on mercury related regulations for light sources

(EU RoHS directive, EU Mercury regulation and UN-Minamata convention)

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Introduction

As lighting industry, we support the regulatory effort to reduce the amount of hazardous substances in products. Our companies continuously work on the development of alternative light sources that do not contain mercury when this is technically and economically possible. At this stage of development and state of technology, it is not possible, to remove mercury from all different light sources for all kinds of applications and still maintain energy efficient and affordable light sources.

The use of mercury, a hazardous substance, in light sources is regulated by multiple regulations, such as the EU RoHS directive for electrical and electronic equipment (EEE), as well as similar regulations in a growing number of countries and regions. In addition, mercury is regulated for EEE in the UN Minamata Convention as well as in corresponding implementing rules in the EU and other regions and countries worldwide. At the same time these light sources are also regulated by the EU Ecodesign Regulation and other policies in different countries with energy efficiency being the mayor focus. As the RoHS directive and the Ecodesign Regulation are both under revision, and the EU implementation of Minamata is relatively new, a lot of questions are posed on what is allowed by a regulation and what is not allowed, and confusion is sensed on the terms and definitions used in the different regulations.

As LightingEurope we try to explain definitions in the regulations and the differences between the regulations, based on the existing (draft) texts of the regulations and standards. This FAQ will be a living document that is regularly updated to create clarity and avoid misinterpretations for Lighting manufacturers, importers and regulatory authorities.

1. Questions relating to all regulations

1.1 General lighting versus Special lighting

As the regulator recognizes that more than 90% of all light sources are used for general illumination of indoor and outdoor spaces, providing light to humans to observe the environment, to enable them to do their work and to relax. Thus, this is the group of light sources that needs to be regulated as they bring most of the mercury in the market and consume most of the energy. Specialty products that perform a special function in equipment, like the generation of UV light or are used to grow plants, also get attention but have less impact on the environment due to their limited quantity in the market. The RoHS directive separates general lighting from special lighting by application of the light source. As producers do not sell lamps to the end users, it is very difficult for them to control where the product is used. The Ecodesign Regulation makes the separation by technology. (e.g. White light sources and non-white light sources and uses technical differences like the lamp base to differentiate the use).

1. General lighting

- a. General lighting is substantially uniform lighting of an area without provision for special local requirements (according definition in IEC 60050(845 ed.1.0); 845-09-06))

- b. Also, commonly named General Lighting purposes e.g. included e.g. in Directive RoHS 2011/65, Annex III
- c. General lighting lamps are marketed or commercialized primarily to produce visible light. They have standard shape, dimensions and cap. General lighting lamps are lamps, which are not covered by the “special purpose” lamp definition (which covers a huge variety of lamps, applications, lamp caps and connectors as described e.g. in the LE publication).¹
- d. General lighting lamps are not suitable for “special purpose” applications, even if they would fit in the fixture (see special purpose definition in paragraph 2 and Appendix 1).

2. Special lighting (Special purpose lamps):

related to the scope of Directive RoHS 2011/65

- a. Special purpose lamps are designed and used essentially for other types of application, such as traffic signals, terrarium lighting or household appliances and clearly indicated as such on accompanying product information
- b. Special purpose lamps have documented and communicated application-specific features. They generally manufactured in accordance with general-purpose lamp making technology. The use of special design, materials and process steps provide their special features.²
- c. The list of special purpose lamps as mentioned by LightingEurope in Appendix 1, within the scope of RoHS 2011/65, (covering all EEE applications), serves as an interpretation and more profound specification of the stipulation in Annex III of the Directive. As the list of lamps and applications might not cover all varieties and specific small applications developed by B2B companies regarding for example processes, curing, disinfection, it does by no means constitute any legal liability for LightingEurope or its Member Companies and is given solely for informative purposes. LightingEurope reserves the right to amend, update or delete this list without any prior notice.

3. Special lighting (Special purpose lamps):

related to the scope of EU 1194 / 2012 Ecodesign Requirements

- a. Special purpose lamps are designed and used essentially for other types of application, such as traffic signals, terrarium lighting or household appliances and clearly indicated as such on accompanying product information should not be subject to the Ecodesign requirements set out in this Regulation.
- b. A special purpose product, within the scope of Ecodesign, (covering only certain white light applications and therefore different from the RoHS scope), means a product that uses the technologies covered by this Regulation but is intended for use in special applications because of its technical parameters as described in the technical documentation. Special applications are those that require technical parameters, not necessary for the purposes of lighting average scenes or objects in average circumstances (general (purpose) lighting). These lamps may be / are mainly manufactured in accordance with general purpose technologies. See for more information in Appendix 2 of this document.

¹ See for more information: Appendix 1 of this document and LightingEurope Position Paper on Global Mercury Limits, 2013:

https://www.lightingeurope.org/images/publications/position-papers/LE_PP_Global_Mercury_limit_20131002_final.pdf

² Ibid.

1.2 Fluorescent lamps

- A discharge lamp of the low-pressure mercury type, in which most of the light is emitted by one or several layers of phosphors excited by the ultraviolet radiation from the discharge (according to standard EN 60901 ed.2.2).
- These Fluorescent lamps (FL - lamp types) exist already from the 30s and their efficiency has been increased during the years as a result of the use of tri-band fluorescent materials (sometimes named Tri-band “phosphors” due to the old halo phosphate fluorescent materials based on phosphor compounds).
- LFL – lamps are the standard linear shaped lamps which are double capped.
- NLFL - Non-linear lamps have also been developed in various shapes (e.g. circular, square, U-bend etc.) and might be double-capped or single-capped.

1.3 Single-capped fluorescent lamps (RoHS 2011/65/EU)

- A fluorescent lamp having a single cap for operation on external circuits with either an internal or an external means of starting.
- This family of lamps consists of compact shaped lamps (see CFL lamps) and fluorescent lamps with larger dimensions, e.g. circular and square shaped.
- These lamps are covered by Directive EU RoHS 2011/65, Annex III.

1.4 Compact Fluorescent Lamps (UN-Minamata & Mercury regulation 2017/852/EU):

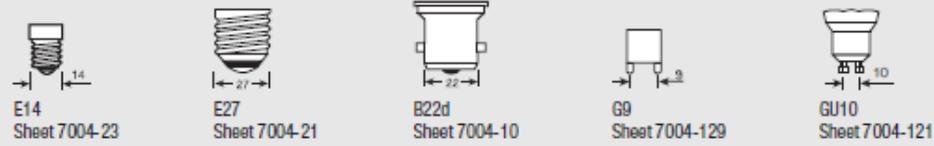
- The CFL lamp family is part of the family of Single-capped fluorescent lamps developed according to standard EN60901 for many different applications, light distributions, light qualities, wattages, shapes and dimensions.
- Mercury requirements for CFL lamps are included in Directive RoHS 2011/65/EU, Mercury regulation 2017/852/EU and UN Minamata Convention
- The CFL lamp family can be split into 2 sub lamp families, CFL.i (integrated electronics) and CFL.ni (non-integrated external electronics),
 - a. CFL.i lamps are designed with an integrated electronic driver inside the lamp bulb housing and can be connected directly to the AC mains electricity supply by use of a generic CFL.i lamp cap, e.g. also used for incandescent lamps (e.g. E27, E14, B22, GU10, see IEC/EN 60061-1 figure below).
 - b. CFL.ni lamps are designed as a modular component which is an exchangeable separate spare part of an EEE luminaire system. CFL.ni lamps are designed as a modular component which is an exchangeable separate (spare) part of the luminaire system. The luminaire cannot function without this part. CFL.ni lamps are connected by specific designed lamp caps (non-mains voltage) to an electronic driver, which is located inside or outside the luminaire. The performance and safety of a CFL.ni lamp and luminaire can only be guaranteed when a certain lamp type is connected to a specific specified electronic driver type, suitable for this specific

lamp type. Therefore, many different specific lamp caps and connectors have been designed to ensure the right performance, power and safety requirements and related standards, in case of lamp exchanges by professional installers or by end-users. The different lamp bases designed for different ni-operations are shown in Figure 1 below (see non-AC supply operations).

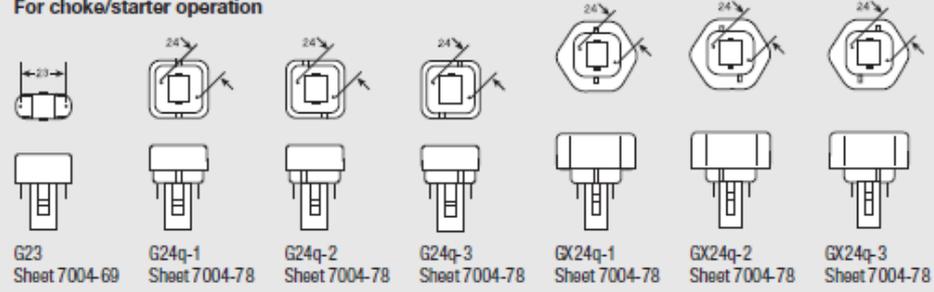
- c. CFL lamps are designed as energy efficient lighting products for many different applications, light distributions, light qualities, wattages and shapes, as alternative for incandescent lamps (CFL.i) or as compact alternatives for Linear fluorescent lamps (CFL.ni) e.g.:
 - i. for general lighting purposes, consisting of tube diameters \leq 17 mm (e.g. T4, T5) and having several different shapes (e.g. ball-, spiral- and stick-shape) and are covered by RoHS exemption 1a, 1b,1c, 1d and 1g;
 - ii. for special purposes lamps are included in the scope of RoHS exemption 1 f. See examples of special purpose applications listed in Appendix 1 of this document”;
- d. Circular- or square shaped lamps with a tube diameter \leq 17 mm and $>$ 17 mm (as covered by RoHS exemptions 1e and 2b3) are not considered as compact fluorescent lamps (CFL) but regarded as single capped (non-linear) fluorescent lamps according to standard EN60901.

Bases IEC/EN 60061-1

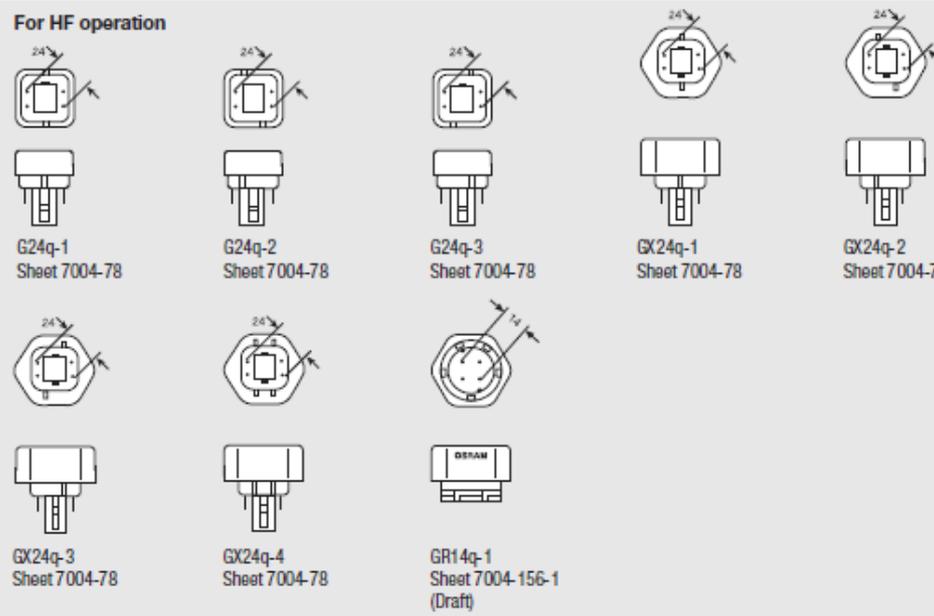
For direct connection to AC supply



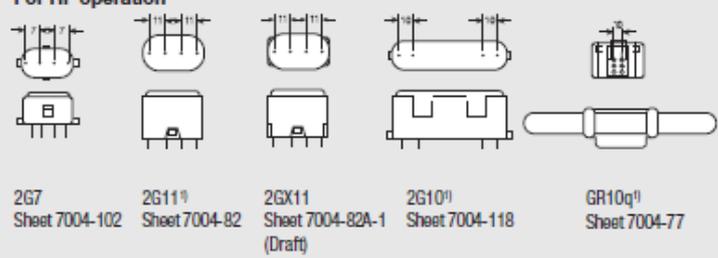
For choke/starter operation



For HF operation



For HF operation



For choke/starter operation

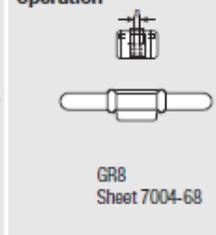


Figure 1 - Different lamp bases

2. Questions regarding the EU implementation of UN Minamata

2.1 What are Mercury Added Products under UN Minamata Convention?

(as implemented under the UN Minamata conventions in many countries e.g. by EU Mercury regulation (EU) 2017/852 - art.5, art.8, Annex II)

- a. "Mercury added products" (MAP's) are products or product components in which Mercury has been added for a specific function.
- b. For lighting applications, the MAP's list comprises different product groups, e.g. luminaires, discharge lamps and its components.
- c. Those Lighting product groups consist of variety of many thousand different types of luminaires, lamps, discharge tubes, burners, components, articles, dosing units, intermediates or substances, compounds and mixtures containing Mercury, Mercury compounds and Mercury mixtures. See paragraph 2.2.

2.2 What are Mercury Added Products, allowed for manufacturing, import and export?

(under UN Minamata Convention & EU Mercury regulation (EU) 2017/852 - art.5, art.8, Annex II)

- a. In the Lighting industry many Mercury Added Products and product components, containing Mercury, Mercury compounds or Mercury mixtures, are used for the processing or manufacturing of intermediates, compounds, components or products for Lighting applications.
- b. The total scope of allowed Lighting MAP's (e.g. luminaires, discharge lamps, discharge tubes, components, articles, dosing units, intermediates or substances, compounds and mixtures) comprises many thousands of different types with specific MAP names which are used by different lighting brands and their suppliers.³

2.3 What is the inventory list of Mercury Added Products, allowed for manufacturing, import and export?

(according EU Mercury regulation (EU) 2017/852 - art.8.1))

- a. LightingEurope and the ZVEI summarized with the EU Commission an inventory list of MAPs existing before 1 Jan 2018, allowed for the Lighting industry, which is related to the MAP list of the UN Minamata Convention (Annex A) and the related EU Mercury regulation (Annex II).⁴

³ See for more website information: EU Mercury Added Products inventory http://ec.europa.eu/environment/chemicals/mercury/regulation_en.htm and the EU MAP list publication [https://circabc.europa.eu/sd/a/d198684c-0834-4f20-9682-dc66553ed066/Inventory%20art%208\(7\)%20Mercury%20Reg%2020190429.pdf](https://circabc.europa.eu/sd/a/d198684c-0834-4f20-9682-dc66553ed066/Inventory%20art%208(7)%20Mercury%20Reg%2020190429.pdf)

⁴ See for EU Mercury Added Products inventory http://ec.europa.eu/environment/chemicals/mercury/regulation_en.htm and the EU MAP list publication [https://circabc.europa.eu/sd/a/d198684c-0834-4f20-9682-dc66553ed066/Inventory%20art%208\(7\)%20Mercury%20Reg%2020190429.pdf](https://circabc.europa.eu/sd/a/d198684c-0834-4f20-9682-dc66553ed066/Inventory%20art%208(7)%20Mercury%20Reg%2020190429.pdf)

The EU MAP list includes all lighting discharge lamps and its components used for the production of discharge lamps and its components (e.g. discharge tubes, burners, dosing units)"" which are all allowed for manufacturing, import and export.⁵

- c. Also, Mercury, Mercury compounds, Mercury mixtures used for the manufacturing of components or products for lighting applications are allowed.

2.4 What are new Mercury Added Products?

(according EU Mercury regulation (EU) 2017/852 - art.8)

- a. New Mercury Added Products are products which are being developed for new applications, not known before 1 Jan 2018. Therefore, import, export and manufacturing of all Mercury added Products and product components, as listed in the inventory MAP list for lighting applications, is allowed after 1 Jan 2018 and shall not be considered as New Mercury Added Products. See also paragraph 2.2.
- b. The total scope of allowed Lighting MAP's (e.g. luminaires, discharge lamps, discharge tubes, components, articles, dosing units, intermediates or substances, compounds and mixtures) comprises many thousands of different types with specific product names which are used by different Lighting brands and their suppliers".

2.5 Which Mercury Added Products are allowed?

(or allowed according the EU Mercury regulation (EU) 2017/852 – Annex II)

- a. Allowed export, import and manufacturing of MAP products/components which are excluded from the prohibited list:
 - ii. products containing Mercury below the specified threshold levels as listed in the Annex II of this regulation products, components etc. not listed in Annex II (see excerpt below)
 - iii. products for civil protection and military uses; and products for research,
 - iv. products for calibration of instrumentation, or for use as a reference standard.
 - v. switches and relays, cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFLs and EEFLs) for electronic displays and measuring devices, when they are used to replace a component of larger equipment and provided that no feasible mercury-free alternative for that component is available, in accordance with Directive 2000/53/EC of the European Parliament and of the Council and Directive 2011/65/EU.
- b. Prohibited export, import and manufacturing in the Union of limited list of mercury-added products/components set out in Annex II shall be prohibited as from the dates set out therein, referring to Article 5 and listed in Annex II (see excerpt below):
 1. Batteries or accumulators that contain more than 0,0005 % of mercury by weight. 31.12.2020

⁵ See EU-MAP list, Part A- IV, page 8 : [https://circabc.europa.eu/sd/a/d198684c-0834-4f20-9682-dc66553ed066/Inventory%20art%208\(7\)%20Mercury%20Reg%2020190429.pdf](https://circabc.europa.eu/sd/a/d198684c-0834-4f20-9682-dc66553ed066/Inventory%20art%208(7)%20Mercury%20Reg%2020190429.pdf)

2. Switches and relays, except very high accuracy capacitance and loss measurement bridges and high frequency radio frequency switches and relays in monitoring and control instruments with a maximum mercury content of 20 mg per bridge, switch or relay. 31.12.2020
3. Compact fluorescent lamps (CFLs) for general lighting purposes: (a) CFL.i \leq 30 watts with a mercury content exceeding 2,5 mg per lamp burner; (b) CFL.ni \leq 30 watts with a mercury content exceeding 3,5 mg per lamp burner. 31.12.2018
4. The following linear fluorescent lamps (LFLs) for general lighting purposes: (a) Triband phosphor $<$ 60 watts with a mercury content exceeding 5 mg per lamp; (b) Halophosphate phosphor \leq 40 watts with a mercury content exceeding 10 mg per lamp. 31.12.2018
5. High pressure mercury vapor lamps (HPMVs) for general lighting purposes. 31.12.2018
6. The following mercury-added cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFLs and EEFLs) for electronic displays: (a) short length (\leq 500 mm) with mercury content exceeding 3,5 mg per lamp; (b) medium length ($>$ 500 mm and \leq 1 500 mm) with mercury content exceeding 5 mg per lamp; (c) long length ($>$ 1 500 mm) with mercury content exceeding 13 mg per lamp. Per 31.12.2018
7. Cosmetics with mercury and mercury compounds, except those special cases included in entries 16 and 17 of Annex V to Regulation (EC) No 1223/2009 of the European Parliament and of the Council. Per 31.12.2020
8. Pesticides, biocides and topical antiseptics. Per 31.12.2020
9. The following non-electronic measuring devices:
 - (a) barometers; (b) hygrometers; (c) manometers; (d) thermometers and other non-electrical thermometric applications; (e) sphygmomanometers; (f) strain gauges to be used with plethysmographs; per 31.12.2020 (g) mercury pycnometers; (h) mercury metering devices for determination of the softening point.

This entry does not cover the following measuring devices: — non-electronic measuring devices installed in large-scale equipment or those used for high precision measurement where no suitable mercury-free alternative is available; — measuring devices more than 50 years old on 3 October 2007; — measuring devices which are to be displayed in public exhibitions for cultural and historical purposes."

c. What are Lighting applications?

"There is a wide variety of Lighting applications comprising lamps, luminaires and equipment for general (lighting) purpose and special purpose, used for consumer and professional applications.⁶

d. What are discharge lamps?

⁶ See footnote 1.

- i. Discharge lamps are consumable spare part components for luminaires or equipment specially developed for a wide variety of applications e.g. for general lighting purpose and special uses or specific light spectrum purposes.
 - ii. A specific amount of Mercury or Mercury compound/mixture is dosed into the discharge lamp via specifically designed dosing units or pellets/droplets.
 - iii. Mercury is a vital element in producing a specific light or spectrum of a discharge lamp and no alternative substance is available to create that specific light or spectrum.
- e. What are Lamp dosing units?
 - i. "Dosing units are Mercury containing components. Dosing units are specially designed to be used during production process of specific discharge lamps to dose a specific amount of Mercury, Mercury compound or Mercury mixture into the discharge tube of a lamp.
 - ii. These components are under REACH identified as ""Articles""
 - iii. An article is defined in REACH as 'an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition'. In a general sense, an article is to be considered as a finished product or component."
- f. Is import and export of dosing units allowed under UN Minamata convention or country regulations e.g. like the EU Mercury regulation?
 - i. There are no import and export restrictions of dosing units for lighting products as these units are Mercury Added Products under UN Minamata (Art. 4, Annex A) and EU Mercury regulation (Art.5 - Annex II) and no restrictions are listed for dosing units in related Annexes.
 - ii. See also the EU inventory of allowed MAP inventory list publication 2nd of May 2019 chapter IV, page 8 ([https://circabc.europa.eu/sd/a/d198684c-0834-4f20-9682-dc66553ed066/Inventory%20art%208\(7\)%20Mercury%20Reg%2020190429.pdf](https://circabc.europa.eu/sd/a/d198684c-0834-4f20-9682-dc66553ed066/Inventory%20art%208(7)%20Mercury%20Reg%2020190429.pdf): ""Gas discharge lamps that use an electric arc through vaporized mercury to produce light, including e.g.: "[...] Components used for the production of discharge lamps and its components (e.g. discharge tubes, burners, dosing units) [...]"
- g. What are EU Mercury Added Products existing before 1 Jan 2018 and allowed to be placed on the market after Jan 2018? (see EU Mercury regulation (EU) 2017/852 - art.8)?
 - i. "The list of existing Mercury Added Products placed on the market before 1 Jan 2018 consists of many thousands of different Luminaires, equipment, lamps and its components (e.g. dosing units like amalgam pellets/strips/balls and Mercury dosing capsules) which is allowed to place on the market after Jan 2018. See the EU inventory of allowed MAP list revision publication 2nd of May 2019, Part A-IV, page 8: "Gas discharge lamps that use an electric arc through vaporized mercury to produce light,

- including e.g.: “[...] Components used for the production of discharge lamps and its components (e.g. discharge tubes, burners, dosing units) [...]”
- ii. New MAP's are allowed to be placed on the market in case the Mercury content is lower than the old version. The EU Mercury regulation states that: “New Mercury Added Products are allowed in case (a) equipment which is necessary for the protection of the essential interests of the security of Member States, including arms, munitions and war material intended for specifically military purposes; (b) equipment designed to be sent into space; (c) technical improvements made to or the redesign of mercury-added products that were being manufactured (In or outside EU) prior to 1 January 2018 provided that such improvements or redesign lead to less mercury being used in those products.”
- h. What are EU Manufacturing processes existing before 1 Jan 2018, which are allowed to be used after January 2018? (see EU Mercury regulation (EU) 2017/852 - art.8)?
- i. “The list of existing manufacturing processes used before 1 Jan 2018 comprises all manufacturing processes e.g. for making substances, compounds, mixtures, components, dosing units, products or any other product, equipment or component for all Lighting applications, like general lighting and special purpose applications.
 - ii. These processes are not considered to be new manufacturing processes as these existed already before 1 Jan 2018 and are therefore allowed to be used after January 2018.
 - iii. Manufacturing processes are also allowed, when manufacturing or using MAPs, if these MAP's are not prohibited by the (EU) 2017/852 -Annex II list.”
- i. Is the manufacturing of intermediates, mixtures, dosing units, components, discharge tubes or discharge lamps allowed under UN Minamata (Art.5) or the EU Mercury Regulation?
- i. "All these manufacturing processes are allowed, if the manufactured MAP's are not prohibited by the (EU) 2017/852 - Annex II list.
 - ii. All these processes shall not be considered as new manufacturing processes as they already existed before 1 Jan 2018.
 - iii. All Lighting manufacturing processes are allowed e.g. for making Mercury, Mercury compounds or intermediates, Mercury mixtures, dosing units (e.g. amalgam pellets/strips/balls and Mercury dosing capsules), components, discharge tubes or discharge lamps or any other product or product component for Lighting applications, like general lighting purpose or special purpose lamps. Restrictions for manufacturing processes only exist for other application areas as listed in UN Minamata (Art.5, Annex B) or EU Regulation (EU) 2017/852 (Art.7, Annex III)”

- j. Are cosmetics, pesticides, biocides and topical antiseptics allowed as listed in UN Minamata convention Annex A and (EU) 2017/852 - Annex II) used in Lighting products?
 - i. "A limited number of substances/mixtures, listed in the MAP Annex II list, containing Mercury-substances, -compounds or -mixtures like cosmetics, pesticides, biocides and topical antiseptics are prohibited per December 2020. However, these are not present in Lighting products"
 - ii. The listed MAP's listed in UN Minamata Annex II, like cosmetics, pesticides, biocides and topical antiseptics are not present in Lighting products"

- k. Is the import of Mercury, Mercury compounds and Mercury mixtures allowed under UN Minamata Convention and listed in country regulations, e.g. EU Mercury regulation (EU) 2017/852 - art.4 and Annex I?
 - i. "There are no restrictions for import and export of Mercury, Mercury compounds and mixtures if the concentration of Mercury is < 95% by weight.
 - ii. Import and export of Mercury, Mercury compounds and Mercury mixtures with a Mercury concentration of at least 95% by weight is allowed for Lighting products (as those applications are allowed use in case of an exemption via a written consent form related Government (under certain conditions)".

- l. "Is the export of Mercury, Mercury compounds and Mercury mixtures allowed under UN Minamata Convention?
 - i. Export of Mercury, Mercury compounds and Mercury mixtures is allowed for allowed use in case of an exemption via a written consent form related Governments
 - ii. Each Party shall not allow the export of mercury except:
 - 1. To a Party that has provided the exporting Party with its written consent, and only for the purpose of: (i) A use allowed to the importing Party under this Convention; or(ii) Environmentally sound interim storage as set out in Article 10; or
 - 2. To a non-Party that has provided the exporting Party with its written consent, including certification demonstrating that: (i) The non-Party has measures in place to ensure the protection of human health and the environment and to ensure its compliance with the provisions of Articles 10 and 11; and (ii) Such mercury will be used only for a use allowed to a Party under this Convention or for environmentally sound interim storage as set out in Article 10.
 - iii. An exporting Party may rely on a general notification to the Secretariat by the importing Party or non-Party as a written consent.

- iv. Such general notification shall set out any terms and conditions under which the importing Party or non-Party provides its consent. The notification may be revoked at any time by that Party or non-Party. The Secretariat shall keep a public register of all such notifications.
 - v. Each Party shall not allow the import of mercury from a non-Party to whom it will provide its written consent unless the non-Party has provided certification that the mercury is not from sources identified as not allowed under paragraph 3 or paragraph 5 (b).
 - vi. A Party may submit a general notification of consent."
- m. Are Mercury, Mercury compounds or Mercury mixtures allowed under UN Minamata and EU Mercury regulation (EU) 2017/852? "Mercury, Mercury compounds or Mercury mixtures are chemical compounds without any special designed size, shape, surface or design (as defined in UN Minamata Annex I and in REACH as substances or mixture))
- i. These are allowed to be manufactured and used for manufacturing MAP's.
 - ii. A limited number of Mercury compounds are prohibited for export as listed in (EU) 2017/852 - Annex I. However, export/import is permitted for allowed use in case of an exemption via a written consent form related Governments. See export restrictions for Mercury compounds and mixtures
- n. What is the description of Mercury or Mercury compounds?
- i. "The description of Mercury and Mercury compounds is described in the UN Minamata convention (art.3) as following:
 - "Mercury" include mixtures of mercury with other substances, including alloys of mercury, with a mercury concentration of at least 95 per cent by weight; and
 - "Mercury compounds" means mercury (I) chloride (known also as calomel), mercury (II) oxide, mercury (II) sulphate, mercury (II) nitrate, cinnabar and mercury sulphide."
- o. Which export restrictions for Mercury compounds or mixtures are valid for export outside EU from 1 Jan 2018 onwards, according (EU) 2017/852?
- i. "In the EU Mercury regulation 2017/852 - art.3, Mercury compounds or mixtures are listed in Annex I, which are prohibited for export outside EU from 1 January 2018:
 1. Mercury (I) chloride (Hg₂Cl₂, CAS RN 10112-91-1)
 2. Mercury (II) oxide (HgO, CAS RN 21908-53-2)
 3. Cinnabar ore
 4. Mercury sulfide (HgS, CAS RN 1344-48-5) Mercury compounds prohibited for export from 1 January 2020:
 5. Mercury (II) sulphate (HgSO₄, CAS RN 7783-35-9)
 6. Mercury (II) nitrate (Hg(NO₃)₂, CAS RN 10045-94-0) Mixtures of mercury prohibited for export and import from 1 January 2018:
 7. Mixtures of mercury with other substances, including alloys of mercury, with a mercury concentration of at least 95 % by weight.

- ii. Export outside EU for the purpose of reclaiming mercury, of mercury compounds and of mixtures of mercury that are not subject to the prohibition laid down in paragraph 2 shall be prohibited
 - iii. Export outside EU is allowed for the purpose of laboratory-scale research or laboratory analysis and for Mercury Added Products."

- p. UN Minamata definitions, according (EU) 2017/852 - art 2:
 - i. "For the purposes of this Regulation, the following definitions apply:
 - a. 'mercury' means metallic mercury (Hg, CAS RN 7439-97-6); (2) 'mercury compound' means any substance consisting of atoms of mercury and one or more atoms of other chemical elements that can be separated into different components only by chemical reactions;
 - b. 'mixture' means a mixture or solution composed of two or more substances;
 - c. 'mercury-added product' means a product or product component that contains mercury or a mercury compound that was intentionally added;
 - d. 'mercury waste' means metallic mercury that qualifies as waste as defined in point (1) of Article 3 of Directive 2008/98/EC;
 - e. 'export' means any of the following: (a) the permanent or temporary export of mercury, mercury compounds, mixtures of mercury and mercury-added products meeting the conditions of Article 28(2) TFEU; (b) the re-export of mercury, mercury compounds, mixtures of mercury and mercury-added products not meeting the conditions of Article 28(2) TFEU which are placed under a customs procedure other than the external Union transit procedure for movement of goods through the customs territory of the Union;
 - f. 'import' means the physical introduction into the customs territory of the Union of mercury, mercury compounds, mixtures of mercury and mercury-added products that are placed under a customs procedure other than the external Union transit procedure for movement of goods through the customs territory of the Union;
 - g. 'disposal' means disposal as defined in point (19) of Article 3 of Directive 2008/98/EC;
 - h. 'primary mercury mining' means mining in which the principal material sought is mercury;
 - i. 'conversion' means the chemical transformation of the physical state of mercury from a liquid state to mercury sulfide or a comparable chemical compound that is equally or more stable and equally or less soluble in

water and that presents no greater environmental or health hazard than mercury sulfide;

- j. 'placing on the market' means supplying or making available, whether in return for payment or free of charge, to a third party. Import shall be deemed to be placing on the market."

Appendix 1: LightingEurope definition of General Lighting and Special Purpose Lamps

LightingEurope definitions of general lighting as well as special purpose lighting regarding substance regulations

- i. See ELC-FAQ1 on RoHS and LE position paper on Global harmonized limits).
http://www.lightingeurope.org/uploads/files/ELC_FAQs_RoHS_20111214_final.pdf
- ii. See LE Position Paper on Global Harmonized limits on Mercury
https://www.lightingeurope.org/images/publications/position-papers/LE_PP_Global_Mercury_limit_20131002_final.pdf

Definition of general lighting lamps

General lighting lamps are marketed or commercialised primarily for the production of visible light. They have standard shape, dimensions and cap. General lighting lamps are lamps, which are not covered by the “special purpose” lamp definition.

Definition of special purpose lamps

Special purpose lamps have documented and communicated application-specific features. They generally manufactured in accordance with general-purpose lamp making technology. The use of special design, materials and process steps provide their special features, e.g.:

Where non-visible radiation has importance, for example:

- Medical/Therapy lamps
- Sun tanning lamps
- Black light lamps (e.g. for diazoprinting reprography, lithography, insect traps, photochemical and curing processes)
- Black light blue lamps (e.g. for entertainment, forensics, dermatology, banknote validation)
- Disinfection lamps
- Pet care lamps (e.g. aquaria or reptile lamps)

Where different applications require specific lamps, for example:

- Technical lamps for colour comparison
- Coloured lamps (incl. saturated colours)
- Lamps used in horticultural lighting
- Lamps designed for eye-sensitivity of birds and other animals
- Projector lamps
- High colour rendering index lamps like food lighting applications, bakeries, etc.
- Lamps with special ignition features (e.g. external ignition strip)

Appendix 2: Definitions in Ecodesign requirements EU 1194/2012

COMMISSION REGULATION (EU) No 1194/2012 of 12 December 2012

implementing Directive 2009/125/EC of the European Parliament and of the Council regarding ecodesign requirements for directional lamps, light emitting diode lamps and related equipment

Preamble (5):

Products subject to this Regulation are designed essentially for the full or partial illumination of an area, by replacing or complementing natural light with artificial light, in order to enhance visibility in that area.

Special purpose lamps designed essentially for other types of application, such as traffic signals, terrarium lighting or household appliances and clearly indicated as such on accompanying product information should not be subject to the ecodesign requirements set out in this Regulation.

Article 2.4:

4. 'special purpose product' means a product that uses the technologies covered by this Regulation but is intended for use in special applications because of its technical parameters as described in the technical documentation. Special applications are those that require technical parameters not necessary for the purposes of lighting average scenes or objects in average circumstances. They are of the following types:

(a) applications where the primary purpose of the light is not lighting, such as:

- (i) emission of light as an agent in chemical or biological processes (such as polymerization, ultraviolet light used for curing/drying/hardening, photodynamic therapy, horticulture, pet care, anti- insect products)
- (ii) image capture and image projection (such as camera flashlights, photocopiers, video projectors)
- (iii) heating (such as infrared lamps)
- (iv) signaling (such as traffic control or airfield lamps)

(b) lighting applications where:

- (i) the spectral distribution of the light is intended to change the appearance of the scene or object lit, in addition to making it visible (such as food display lighting or coloured lamps as defined in point 1 of Annex I), with the exception of variations in correlated color temperature; or
- (ii) the spectral distribution of the light is adjusted to the specific needs of particular technical equipment, in addition to making the scene or object visible for humans (such as studio lighting, show effect lighting, theatre lighting); or
- (iii) the scene or object lit requires special protection from the negative effects of the light source (such as lighting with dedicated filtering for photosensitive patients or photosensitive museum exhibits); or
- (iv) lighting is required only for emergency situations (such as emergency lighting luminaires or control gears for emergency lighting); or
- (v) the lighting products have to withstand extreme physical conditions (such as vibrations or temperatures below – 20 °C or above 50 °C)

(c) products incorporating lighting products, where the primary purpose is not lighting, and the product is dependent on energy input in fulfilling its primary purpose during use (such as refrigerators, sewing machines, endoscopes, blood analyzers);

5. 'light source' means a surface or object designed to emit mainly visible optical radiation produced by a transformation of energy. The term 'visible' refers to a wavelength of 380-780 nm;

6. 'lamp' means a unit whose performance can be assessed independently, and which consists of one or more light sources. It may include additional components necessary for starting, power supply or stable operation of the unit or for distributing, filtering or transforming the optical radiation, in cases where those components cannot be removed without permanently damaging the unit;

7. 'lamp cap' means that part of a lamp which provides connection to the electrical supply by means of a lamp holder or lamp connector and may also serve to retain the lamp in the lamp holder;

8. 'lamp holder' or 'socket' means a device which holds the lamp in position, usually by having the cap inserted in it, in which case it also provides the means of connecting the lamp to the electric supply;

9. 'directional lamp' means a lamp having at least 80 % light output within a solid angle of π sr (corresponding to a cone with angle of 120°);

10. 'non-directional lamp' means a lamp that is not a directional lamp;

11. 'filament lamp' means a lamp in which light is produced by means of a threadlike conductor which is heated to incandescence by the passage of an electric current. The lamp may contain gases influencing the process of incandescence;

12. 'incandescent lamp' means a filament lamp in which the filament operates in an evacuated bulb or is surrounded by inert gas;

13. '(tungsten) halogen lamp' means a filament lamp in which the filament is made of tungsten and is surrounded by gas containing halogens or halogen compounds; it may be supplied with an integrated power supply;

14. 'discharge lamp' means a lamp in which the light is produced, directly or indirectly, by an electric discharge through a gas, a metal vapour or a mixture of several gases and vapours;

15. 'fluorescent lamp' means a discharge lamp of the low- pressure mercury type in which most of the light is emitted by one or more layers of phosphors excited by the ultraviolet radiation from the discharge. Fluorescent lamps may be supplied with an integrated ballast;

16. 'fluorescent lamp without integrated ballast' means a single- or double-capped fluorescent lamp without integrated ballast;

17. 'high intensity discharge lamp' means an electric discharge lamp in which the light-producing arc is stabilised by wall temperature and the arc has a bulb wall loading in excess of 3 watts per square centimetre;

18. 'light emitting diode (LED)' means a light source which consists of a solid-state device embodying a p-n junction of inorganic material. The junction emits optical radiation when excited by an electric current;

19. 'LED package' means an assembly having one or more LED(s). The assembly may include an optical element and thermal, mechanical and electrical interfaces;

20. 'LED module' means an assembly having no cap and incorporating one or more LED packages on a printed circuit board. The assembly may have electrical, optical, mechanical and thermal components, interfaces and control gear;

21. 'LED lamp' means a lamp incorporating one or more LED modules. The lamp may be equipped with a cap;

22. 'lamp control gear' means a device located between the electrical supply and one or more lamps, which provides a functionality related to the operation of the lamp(s), such as transforming the supply voltage, limiting the current of the lamp(s) to the required value, providing starting voltage and preheating current, preventing cold starting, correcting the power factor or reducing radio interference. The device may be designed to connect to other lamp control gear to perform these functions. The term does not include:

- control devices
- power supplies within the scope of Commission Regulation (EC) No 278/2009 (p.3);

23. 'control device' means an electronic or mechanical device controlling or monitoring the luminous flux of the lamp by other means than power conversion, such as timer switches, occupancy sensors, light sensors and daylight regulation devices. In addition, phase cut dimmers shall also be considered as control devices;

24. 'external lamp control gear' means non-integrated lamp control gear designed to be installed outside the enclosure of a lamp or luminaire, or to be removed from the enclosure without permanently damaging the lamp or the luminaire;

25. 'ballast' means lamp control gear inserted between the supply and one or more discharge lamps which, by means of inductance, capacitance or a combination of inductance and capacitance, serves mainly to limit the current of the lamp(s) to the required value;

26. 'halogen lamp control gear' means lamp control gear that transforms mains voltage to extra low voltage for halogen lamps;

27. 'compact fluorescent lamp' means a fluorescent lamp that includes all the components necessary for starting and stable operation of the lamp;

28. 'luminaire' means an apparatus which distributes, filters or transforms the light transmitted from one or more lamps and which includes all the parts necessary for supporting, fixing and protecting the lamps and, where necessary, circuit auxiliaries together with the means for connecting them to the electric supply;

29. 'end-user' means a natural person buying or expected to buy a product for purposes which are outside his trade, business, craft or profession;

30. 'final owner' means the person or entity owning a product during the use phase of its life cycle, or any person or entity acting on behalf of such a person or entity.

For the purposes of Annexes III to V, the definitions set out in Annex II shall also apply.

Article 3

Ecodesign requirements

1. The electrical lighting products listed in Article 1 shall meet the ecodesign requirements set out in Annex III, except if they are special purpose products.

Each ecodesign requirement shall apply in accordance with the following stages:

Stage 1: 1 September 2013

Stage 2: 1 September 2014

Stage 3: 1 September 2016.

Unless a requirement is superseded or unless otherwise specified, each requirement shall continue to apply together with the other requirements introduced at later stages.

2. Starting from 1 September 2013, special purpose products shall comply with the information requirements set out in Annex I.

Article 4

Conformity assessment

1. The conformity assessment procedure referred to in Article 8 of Directive 2009/125/EC shall be the internal design control set out in Annex IV to that Directive or the management system set out in Annex V to the same Directive.

2. For the purposes of conformity assessment pursuant to Article 8 of Directive 2009/125/EC, the technical documentation file shall:

(a) contain a copy of the product information provided in accordance with part 3 of Annex III to this Regulation;

(b) provide any other information required by Annexes I, III and IV to be present in the technical documentation file;

(c) specify at least one realistic combination of product settings and conditions in which the product complies with this Regulation.

Article 5

Verification procedure for market surveillance purposes

Member States shall apply the verification procedure described in Annex IV to this Regulation when performing the market surveillance checks referred to in Article 3(2) of Directive 2009/125/EC.

Article 6

Indicative benchmarks

The indicative benchmarks for the best-performing products and technologies available on the market at the time of adopting this Regulation are set out in Annex V.

Article 7

Revision

The Commission shall review this Regulation in the light of technological progress no later than three years after its entry into force and shall present the results of that review to the Consultation Forum. EN 14.12.2012 Official Journal of the European Union L 342/5

Contact

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LightingEurope is the voice of the lighting industry, based in Brussels and representing 34 companies and national associations. Together these members account for over 1,000 European companies, a majority of which are small or medium-sized. They represent a total European workforce of over 100,000 people and an annual turnover exceeding 20 billion euro. LightingEurope is committed to promoting efficient lighting that benefits human comfort, safety and well-being, and the environment. LightingEurope advocates a positive business and regulatory environment to foster fair competition and growth for the European lighting industry. More information is available at www.lightingeurope.org.