



Environmental information on metal-halide lamps (HQI® and HCl®)

• Product description and operating information

OSRAM metal-halide lamps are lamps in the HQI® and HCl® family in which the discharge arc burns at pressure in an atmosphere of halogen and mercury vapour and rare earths. Metal-halide lamps are available in wattages from 15 W to 3500 W. When the high-wattage lamps are in the cold state, in other words at room temperature (21 °C), the mercury is generally present in the form of small metallic droplets in the discharge vessel (burner). When the lamp is started, the mercury vaporises as the temperature in the burner rises and heats up in the arc between the electrodes. The temperature of the outer bulb is several 100 °C. When thermal equilibrium is reached, the mercury vapour exerts a pressure of up to max. 15 bar on the burner.

Some HCl and HQI lamps include tiny amounts of Krypton-85 in filling gas for better ignitability of the lamp during their intended lifetime. The lamp filling gas contains about 1 ppm radioactive Krypton-85. Kr-85 is an inert noble gas with no specific danger in cause of inhalation.

In some HQI lamps a thoriated tungsten electrode can be used to improve ignition and guarantee stability throughout the lifetime of the lamp. Small amounts of radioactive material (Th-232 < 1000 Bq per lamp) are deliberately added as thoriated tungsten to these kinds of lamps for functional reasons. Contamination is not possible.

Mercurycontent for the OSRAM HQI® and HCl® lamp family

Wattage	Mercurycontent
15 W	max. 0.003 g
20 W	max. 0.005 g
35W	max. 0.005 g
70W	max. 0.01 g
100W	max. 0.01 g
150W	max. 0.03 g
250W	max. 0.035 g
300W bis 3500W	max. 0.25 g

Detailed information on each individual lamp can be found under: <http://catalogx.myosram.com>

• Environmental Impact

When used and disposed of as intended, lamps do not present any risk to health or the environment. As a consumer the only case of exposure to mercury is given when the glass of the lamp is cracked or broken. If this happens, the released quantity of mercury is very small and does not pose an acute risk to health, but the broken lamp should still be cleaned up as described below. For more information see: www.osram.com/mercury

These lamps are manufactured under regulatory control as a consumer product acc. to IAEA Basic Safety Standard BSS 115. Radiological consequences (radiation exposure) for members of the public are insignificant during the entire life cycle of these lamps as demonstrated in several studies e.g. IAEA safety report and far below the natural background radiation: All affected lamps are within IAEA-10µSv-concept.

• Legal requirements (EU)

In the EU and several other countries, HQI® and HCl® family have to fulfil the requirements of EU Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment – RoHS. See www.osram.com/ile

Information on Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (aka "REACH") see www.osram.com/reach.

• Health risks

Inhaling mercury or mercury compounds in vapour or powder form can lead to health problems. The resorption of mercury in oral or dermal form is negligible. The lamp may only be operated with its outer bulb intact as otherwise the intense UV radiation escaping from the lamp may damage eyes and cause skin irritation.

• Protection against lamp breakages

In case of destruction of the outer bulb lamp must be switched off

To avoid health risks we recommend the following procedure in the event of break of the burner:

- If the lamp was broken in a luminaire, make sure to disconnect the power to avoid the risk of electric shock.
- In the immediate vicinity leave the room to avoid inhaling mercury vapour.
- The room should be carefully ventilated not less than 15 minutes.
- Remove all fragments carefully Once the luminaire has cooled down and certainly before it is used again, all residual mercury must be thoroughly removed from the inside of the luminaire. To avoid contact with the skin, we recommend the use of disposable gloves. Liquid mercury can be removing also with commercially available adsorbents (activated charcoal).
- The breakage must be forwarded to a specialist company for disposal.

- **Disposal of used metal halide lamps**

Since metal-halide lamps contain noxious substances (particularly mercury) they have to be disposed of in Europe as special waste under

EWC Code 20 01 21* “Fluorescent tubes and other mercury-containing waste”

Metal-halide lamps are affected in EU by the scope of WEEE and can be disposed free of charge from private households and small consumers at all communal disposal facilities. More information under www.osram.com/weee and your national OSRAM partner. In other countries the relevant national regulations must be followed.

Disposal of Kr-85-containing and/or Th-232-containing lamps according to national regulations e.g. in Europe is covered by WEEE regulations.

- **OSRAM contact address**

If you need further information please contact your OSRAM sales partner or the Environment, Health and Safety-Sustainability in Munich:

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Email: environment@info.osram.com

Subject to change without notice

