

Light is OSRAM

**OSRAM****Material Safety Data Sheet for transportation****OSRAM XBO® - Xenon short arc lamps****Dangerous goods contained in manufactured article / lamp UN2911**

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This transport safety data sheet provides information related with the shipment of lamps containing dangerous goods, its contents is not subject to regulation. For environmental issues, find more information in the OSRAM section "environment" at <http://www.osram-group.com/en/sustainability>. The contents of this document is not for the use of lamps and is subject to revision without further notice. Below information advises what to do in cases of incidents in the course of transportation. For better reading, the term „lamp“ is used instead of the full name of lamp types. Furthermore, specific lamp information helps to decide if transport of lamps are exempted from dangerous goods regulation by not exceeding regulatory thresholds per lamp or per package or per consignment depending on the substance contained. For radionuclides in lamps, higher nationally applicable limit values for exemption may apply as recommend by IAEA Safety Guideline TECDOC-1679.

**1 Product description**

This lamp belongs to the group of discharge lamps generating light between two metal electrodes. The cathode within glass bulb are made of thoriated tungsten (specific activity > 10 Bq/g). The activity [Bq] per lamp listed in below table. Thorium is a naturally occurring radioactive element mainly emitting alpha radiation fully shielded by the glass bulb, but also low-level gamma-radiation, which penetrates the bulb. XBO lamps filled with compressed noble gas argon exempted from dangerous goods regulation if packed in a safe package. Be careful if handling unpacked lamps and read safety instructions for the use.



XBO lamps 75 – 300 W



XBO lamps 450 – 10.000 W

*Pictures are samples, variation are possible.*

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Table 1: Lamp values

Type	Total activity per lamp in Bq /Th. (max.)	Specific activity Bq/g( Th)	Number of lamps per consignment without Dangerous Goods Declaration (<10.000 Bq) in pieces
XBO < 150 W	max. 80 Bq	143	125
XBO 180 W - 500 W	max. 200 Bq	143	50
XBO 900 W -1200 W	max. 1000 Bq	143	10
XBO 1600 W - 4200 W	max. 2000 Bq	143	5
XBO 4500 W - 6500 W	max. 2000 Bq	143	5
XBO 7000 W - 10000 W	max. 2000 Bq	143	5

**2 Dangerous goods information**

This lamp type meets the general criteria for exemption from dangerous goods regulation as published with UN Recommendations on the Transport of Dangerous Goods, subsection 1.1.1.9 “Lamps containing dangerous goods”.

Table 2: Dangerous Goods Regulation

Mode of transport	Activity per consignment > 10.000 Bq ?	UN no.	Proper Shipping Name
Air	No	---	Not subject to Dangerous Goods Regulation
Sea Road	Yes	UN2911	Radioactive material, excepted package - articles

**3 Immediate hazards to health**

As long as the lamp is packed within undamaged manufacturers’ original package, the projectile effects of any rupture of the bulb will be contained within the package. In case of damaged package, there is a potential risk for lamp breakage. Handle with care and wear protective clothing for face and body during handling unpacked lamps. After lamp breakage, the released small quantity of noble gas is not dangerous but room should be ventilated for a few minutes.

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#### **4 Risks of fire or explosion**

Lamps are made of non-flammable material and resist high temperatures. This lamp type contains compressed noble gas, avoid external impact which may cause damage to the lamp bulb resulting in explosive effects.

#### **5 Immediate precautions in the case of any accident or incident**

Lamps contain compressed noble gas and thoriated tungsten electrodes. Following procedures are recommended to avoid health risks:

- Handle the lamp with care by using protective closing.
- Lamps contain highly compressed gas, avoid breakage resulting in explosive effects.
- If lamp bulb is broken, be careful to avoid damage to skin by shards of glass. The released quantity of noble gas is not dangerous but ventilate the room with fresh air for a few minutes.
- Use gloves for handling thoriated electrodes and store both in a secure place.
- In case of contamination of skin, wash hands and contaminated skin by using clean water.

#### **6 Emergency measures**

In case of a fire, use extinguishing agent suitable for type of surrounding fire.

In absence of a fire and undamaged glass bulb: handle the lamp cautiously while using protective clothing for face, hands and body. If the glass bulb is broken:

- Skin cuttings possible due to sharp-edged shards of glass.
- In case of skin contamination, wash your hands using clean water.
- Clean surrounding area from lamp parts using gloves and wet tissues.

#### **7 Preliminary first aid measures**

OSRAM lamps are consumer goods in a safe package. If XBO lamp is broken, the released quantity of noble gas is not dangerous but ventilate the room with fresh air for a few minutes. If skin is injured by sharp edged glass, treat injuries properly and search for medical help.

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## 8 Disposal

For EU-member states: Since the lamps contain hazardous substances they have to be disposed of in Europe as hazardous waste under EWC-Code 20 01 21: "Fluorescent tubes and other mercury-containing waste". In the EU these lamps are within the scope of Directive 2002/96/EC - WEEE (Waste Electrical and Electronic Equipment) and can be disposed free of charge. More information at OSRAM home page and your national OSRAM partner.

For other countries: Relevant national regulations have to be obeyed. Find further information at OSRAM homepage or at your OSRAM-partner.

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