

PRODUCT SAFETY DATA SHEET
PSDS No. 1.5.4
HTI[®] METAL HALIDE LAMPS



OSRAM brand HTI[®] Metal Halide Lamps, manufactured by OSRAM GmbH, are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are "articles." The following information is provided by OSRAM SYLVANIA Products Inc. as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled): OSRAM HTI[®] Metal Halide Lamps (HTI is a registered trademark of OSRAM GmbH.)

This data sheet covers the following models:
HTI 250 W/SE (Single Ended) HTI 250 W/32 (Reflectorized)
HTI 400 W/SE (Single Ended) HTI 400 W/24 (Reflectorized)
HTI 400 W/DE (Double Ended)

Manufacturer: OSRAM GmbH
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II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.
The following information is for the arc-tube portion of the bulbs only, and does not include materials used in the reflectors or bases. If a lamp is broken, the following materials may be released:

Chemical Name	CAS Number	% by wt.	Exposure Limits in Air (mg/cubic m)	
			ACGIH (TLV)	OSHA (PEL)
^(1,2) Mercury	7439-97-6	<0.1	0.025	0.1 Ceiling
Quartz, Fused	60676-86-0	20-25	0.1 Resp. Dust	0.1
Tungsten	7440-33-7	1-2	---	---
(Insoluble compounds)			5	10
Molybdenum	7439-98-7	1-2	---	---
(Insoluble compounds)			10	15
⁽¹⁾ Nickel	7440-02-0	<0.1	0.05	1

- (1) These chemicals are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
- (2) The mercury in this product is one of the substances known to the state of California to cause reproductive toxicity if ingested. [California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).]

III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

Flammability: Non-combustible.

Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.

Special Firefighting Procedure: Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.

Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

V. HEALTH HAZARDS

A. OPERATING LAMPS

Consult the OSRAM SYLVANIA product catalog or technical data sheets for complete warnings, operating and installation guides for specific bulb types.

WARNING:

- HTI lamps operate at high pressure and at high temperature and may unexpectedly shatter.
- HTI lamps generate ultraviolet radiation which may cause skin and eye irritation with prolonged exposure.
- HTI lamps must be operated only in suitably designed, enclosed fixtures which prevent direct observation of the arc and will prevent lamp fragments from exiting, in the unlikely event of a lamp rupture.

B. LAMP MATERIALS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. No adverse effects are expected from occasional exposure to broken lamps. As a matter of good practice, avoid prolonged or frequent exposure to broken lamps unless there is adequate ventilation. The major hazard from broken lamps is the possibility of sustaining glass cuts.

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards and/or *NIOSH Pocket Guide to Chemical Hazards* lists the following effects of overexposure to the chemicals/materials tabulated below when they are inhaled, ingested, or contacted with skin or eye:

Mercury - Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as pneumonitis, chest pains, shortness of breath, coughing, gingivitis, salivation and possibly stomatitis. May cause redness and irritation as a result of contact with skin and/or eyes.

Quartz, Fused - Fibrosis of the lungs causing shortness of breath and coughing has been associated with silica exposure.

Tungsten - Inhalation of dust may cause mild irritation of nose and throat. Contact may cause mechanical irritation of skin and eyes.

Molybdenum - Oxides have caused irritation to the eyes, nose, and throat; weight loss and digestive disturbances in experimental animals.

Nickel - Skin contact may cause an allergic rash. Inhaled dust of nickel and its compounds have been reported to cause cancer of the lungs and sinuses. Nickel itself is not very toxic if swallowed, but its soluble salts are quite toxic and, if swallowed, may cause giddiness and nausea.

EMERGENCY AND FIRST AID PROCEDURES

Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.

Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.

Ingestion: Seek medical attention.

Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER):

Nickel was identified as a known or suspected carcinogen by NTP and/or IARC.

VI. REACTIVITY DATA

Stability: Stable

Conditions to avoid: None for intact lamps.

Incompatibility (materials to avoid): None for intact lamps.

Hazardous Decomposition Products (including combustion products): None for intact lamps.

Hazardous Polymerization Products: Will not occur.

VII. PROCEDURES FOR DISPOSAL OF LAMPS

OSRAM SYLVANIA recommends that all mercury-containing lamps be recycled. For a list of lamp recyclers and to obtain state regulatory disposal information, log onto www.lamprecycle.org.

If lamps are broken, ventilate area where breakage occurred. Clean-up with a special mercury vacuum cleaner (not a standard vacuum cleaner) or other suitable means that avoids dust and mercury vapor generation. Take usual precautions for collection of broken glass. Place materials in closed containers to avoid generating dust and mercury vapor.

It is the responsibility of the waste generator to ensure proper classification and disposal of waste products. To that end, TCLP tests should be conducted on all waste products, including this one, to determine the ultimate disposition in accordance with applicable federal, state and local regulations. Some states have specific disposal requirements for lamps containing mercury.

VIII. SPECIAL HANDLING INFORMATION - FOR BROKEN LAMPS

Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL or TLV limits. If such ventilation is unavailable, use respirators as specified below.

Respiratory Protection: Use appropriate NIOSH approved respirator if airborne dust concentrations exceed the pertinent PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended if lamps are being broken.

Protective Clothing: OSHA specified cut and puncture-resistant gloves are recommended for dealing with broken lamps.

Hygienic Practices: After handling broken lamps, wash thoroughly before eating, smoking or handling tobacco products, applying cosmetics or using toilet facilities.

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