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PRODUCT SAFETY DATA SHEET
PSDS No. 1.5.1
METAL HALIDE LAMPS
LEAD - FREE

OSRAM SYLVANIA

Sylvania brand Metal Halide Lamps, manufactured by OSRAM SYLVANIA Products Inc., 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 as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled): **Sylvania Metalarc® and Metalarc Pro-Tech® Lamps**
(Lead-Free Metal Halide Lamps for General Lighting)
This data sheet covers PAR 38 medium-based lamps and all mogul-based lamps except MP-175, MP-250, MP-320/350, MP-350/400, MP-360, MI -400, & MP-1000

Manufacturer: OSRAM SYLVANIA Products Inc.
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II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.
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)
	Barium Peroxide	1304-29-6	0-<0.6	0.5	---
(1, 2)	Mercury	7439-97-6	<0.1	0.025	0.1 Ceiling
	Sodium	7440-23-5	<0.01	---	---
	Quartz, Fused	60676-86-0	10-30	0.1 Resp. Dust	0.1
	Glass (Tungsten-Sealing Borosilicate)	---	50-75	10 (3)	15 (3)
	Yttrium Vanadate	13566-12-6	0-<0.5	1.0	1.0
	Aluminum Oxide	1344-28-1	0-<0.03	10 (3)	15 (3)

(1) This chemical is 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).]
(3) Limits as nuisance particulate.

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.

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V. HEALTH HAZARDS

A. OPERATING LAMPS

Consult the OSRAM SYLVANIA Product Catalog or relevant technical data sheets for complete warnings, operating and installation guides for specific lamp types.

WARNING:

- **Metal halide arc-tubes operate at high pressure and high temperature and may unexpectedly rupture.**
- **If the outer jacket is broken and the lamp continues to operate, ultraviolet radiation which may cause skin and eye irritation with prolonged exposure may be emitted. Immediately shut power off and replace lamp.**
- **Metal halide lamps must be operated only in suitably designed fixtures.**

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.

Barium Peroxide - May be fatal if swallowed. Harmful dust. Avoid skin and eye contact.

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

Sodium - Skin contact can cause thermal and/or alkali burns. Fumes from burning sodium are highly irritating to skin, eyes and mucous membranes.

Glass - Glass dust is considered to be physiologically inert and as such, has an OSHA exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust. The ACGIH TLVs for particulates not otherwise classified are 10 mg/cubic meter for total dust and 3 mg/cubic meter for respirable dust.

Yttrium Vanadate - Inhalation of vanadium compounds can cause irritation of the nose, throat, and respiratory tract. Eye contact and prolonged, repeated skin contact may also cause irritation. Studies of workers exposed to this material showed no evidence of chronic or systemic effects.

Aluminum Oxide (Alumina) - Alumina is a non-toxic material which is very low in free-silica content. Sharp-edged particles can irritate the eyes, perhaps the skin, and definitely the mucous membranes of the respiratory tract.

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): None

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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.

Lamps which pass the EPA's TCLP test are considered non-hazardous waste in most states. Always review your local and state regulations which can vary. Based upon the NEMA* Standard LL 3 (*Procedures for High Intensity Discharge Lamp Sample Preparation and the TCLP*) testing protocol, the Metalarc Pro-Tech® PAR 38/ECO™ lamp passes the TCLP test.

*NEMA (National Electrical Manufacturers Association) standard may be obtained from NEMA, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.

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. In the event an outer jacket is broken, the lamp should be shut off immediately and replaced to avoid exposure to ultraviolet radiation.
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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In case of questions, please call:

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