

MATERIAL SAFETY DATA SHEET

Spectro-UV

UV-C Bulbs

UV-C Bulbs, manufactured by Spectro-UV., 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 Spectro-UV as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled) : 4W, 5W, 6W, 8W,11W UV-C Bulbs
Manufacturer : Spectro-UV
4 Dubon Court
Farmingdale, NY 11735
(866) 230-7305

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT.
Although this product is commonly referred to as a fluorescent lamp, it contains no fluorescent phosphors.
If the lamp is broken, the following materials may be released.

Table with 6 columns: Chemical Name, CAS Number, % by wt., Exposure Limits in Air(mg/cubic m) ACGIH (TLV), OSHA (PEL), UN Number. Rows include Glass(inert) and (1,2) Mercury.

- (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 and lead in this product are 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: None-combustible.
Fire Extinguishing Material: 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 Spectro-UV Catalog or relevant technical data sheets for complete warning, operating and installation guides for specific lamp types.

WARNING

- **THESE LAMPS EMIT ULTRAVIOLET (UV) RADIATION WHEN OPERATING.** (253.7 nm range, UV-C)
- Radiation in this range can cause serious injury to the eyes and skin. Avoid exposure to direct UV radiation from operating lamps unless proper eye and skin protection is worn. Exposure for the unprotected eye or skin should not exceed 60 J/m² within an 8-hour period (reference : CIE S 009 / IEC 62471 Photobiological safety of lamps and lamp systems). Note that this value is described as a guide in the control of exposure and is not to be regarded as a fine between safe and dangerous levels.
- These lamps are rg-3 per CIE S 009 / IEC 62471.
- Should not be used for illumination purposes.

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.

NIOSHI/OSHA Occupational Health Guidelines for Chemical Hazards, and/or NIOSHI 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.

Lead - Ingestion and inhalation of lead dust or fume must be avoided. Irritation of the eyes and respiratory tract may occur. Excessive lead absorption is toxic and may include symptoms such as anemia, weakness, abdominal pain, and kidney disease. However, the chemical inertness and insolubility of this material is expected to reduce the potential for systemic lead toxicity.

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 TL Vs for particulates not otherwise classified are 10 mg/cubic meter for total dust and 3 mg/cubic meter for respirable dust.

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 : In the unlikely event of ingestion of a large quantity of material, 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 15 minutes. Seek medical attention.

CARCINOGENIC ASSESSMENT (NTP ANNUAL REPORT, IARC MONOGRAPHS, OTHER) : None

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

Spectro-UV 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 avoid dust and mercury vapor generation. Take usual precautions for collection of broken glass. Clean-up requires special care due to mercury droplet proliferation. Place materials in closed containers to avoid generating dust.

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 state 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.

IX. TRANSPORT INFORMATION

Not classified as Dangerous Good.

Although Spectro-UV attempts to provide current and accurate information herein, it makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from, or arise out of, the use of/or reliance on the information by any person.

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In case of questions, please call :

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