MATERIAL SAFETY DATA SHEET

LOW PRESSURE MERCURY VAPOR LAMPS

The low pressure mercury vapor lamps manufactured by Jelight Company, Inc. are exempted from the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) because they are categorized as 'Articles'. The following information is provided by Jelight Company, Inc. as a courtesy to its customers.

I. PRODUCT IDENTIFICATION

Trade Name (as labeled) Low Pressure Mercury Lamps (Ultraviolet Lamps)

Manufacturer JELIGHT COMPANY, INC.
2 Mason, Irvine, CA 92618
Tel: (949) 380-8774 • Fax: (949) 768-9457
Website: www.jelight.com

II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMP MATERIALS THAT ARE INTACT. If the lamp is broken, the following materials may be released.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>% by wt.</th>
<th>Exposure Limits in Air (mg/cubic m.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH (TLV)</td>
</tr>
<tr>
<td>Quartz (Silica)</td>
<td>60676-86-0</td>
<td>80</td>
<td>0.8</td>
</tr>
<tr>
<td>Mercury</td>
<td>7439-97-6</td>
<td>&lt;0.05&gt;</td>
<td>0.025</td>
</tr>
</tbody>
</table>

III. PHYSICAL PROPERTIES:

Not applicable to intact lamp.

IV. FIRE & EXPLOSION HAZARDS

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Non-combustible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Extinguishing Materials</td>
<td>- Use extinguishing agents suitable for surrounding fire</td>
</tr>
<tr>
<td>Special Firefighting Procedure</td>
<td>- Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during fire-fighting activities.</td>
</tr>
<tr>
<td>Unusual Fire and Explosion Hazard</td>
<td>- When exposed to high temperature, toxic fumes may be released from broken lamps.</td>
</tr>
</tbody>
</table>

V. HEALTH HAZARDS:

Low pressure mercury vapor lamps emit ULTRAVIOLET RADIATION(UV). UV radiation is harmful to the skin and eyes and can cause serious skin burns and eye injury either from direct or reflected radiation. Avoid UV exposure.

There are no known health hazards from exposure to lamp materials that are intact. See additional bulletin on health hazards and safety related to lamp operation. 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. Avoid glass cuts from broken glass. See below for list of health hazards.

- Ultraviolet Radiation: Excessive exposure to UV radiation may result in serious skin burn or eye injury. Proper Personal Protection Equipment(UV Safety Glasses, Gloves, etc.) must be worn.
- Mercury: Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as pneumonia, chest pains, and shortness of breath, coughing, gingivitis, salivation, and possibly stomatitis. Chronic exposure may cause tremors and neuropsychiatric problems. May cause redness and irritation as a result of contact with skin and/or eyes.

- Quartz Inhalation: Chronic excessive exposures to fused silica dust may produce lung injury. Fused silica appears amorphous when subjected to x-ray diffraction, but one report suggests it may contain micro-crystals of quartz and could be fibrogenic. Prolonged excessive exposure to the condensed vapors reportedly can produce transient pulmonary lesions which are reversible upon cessation of exposure. Although the evidence is limited and conflicting, crystalline silica is listed by IARC as possible human carcinogen. The status of fused silica has not been determined.
VI. EMERGENCY AND FIRST AID PROCEDURES

- Ingestion: No adverse effects anticipated since material is insoluble and non-toxic.
- Skin contact: No adverse effects anticipated.
- Eye contact: Irritation due to mechanical abrasion.

Skin Exposure to UV
- Perform normal First Aid procedure for skin burn.

Eye Exposure to UV
- Apply cool pack over closed eye. Seek medical attention as required.

Glass cuts
- Perform normal first aid procedures. Seek medical attention as required.

Inhalation of Mercury
- If discomfort, irritation or symptoms of pulmonary involvement develop, remove form exposure and seek medical attention.

Skin Exposure to Mercury
- Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.

Eye Exposure to Mercury
- Wash eyes, including under eyelids immediately with copious amounts of water for 15 minutes. Seek medical attention.

VII. REACTIVITY DATA

- Stability: Stable

- Conditions to avoid: None for intact lamps

- Incompatibility (materials to avoid): Dissolves in hydrofluoric acid

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

- Hazardous Polymerization Products: Will not occur

VIII. PROCEDURES FOR DISPOSAL OF LAMPS

End of life or damaged/broken lamps must be disposed or recycled properly in accordance with federal, state, and local laws and regulations. For disposal or recycle, please visit www.lamprecycle.org or www.epa.gov/bulbreycling or contact Jelight Company, Inc. at www.jelight.com for detail.

If lamps are broken, ventilate area where breakage occurred. Clean up with mercury suction pump or other suitable means to avoid dust and mercury vapor generation. Take usual precautions for collection of broken quartz. Clean up requires special care due to mercury droplet proliferation. Place materials in closed containers to avoid generation of dust. Then, contact above mentioned websites for disposal.

IX. SPECIAL HANDLING INFORMATION (for broken lamp and/or operating lamp)

- Eye Protection: OSHA specified safety glasses, goggles or face shield are recommended for UV protection when lamp is lit. Similar protection is recommended for handling broken lamps.
- Skin Protection: Proper Clothing and Gloves must be worn to protect the skin from UV radiation burn. Proper skin protections are also recommended for handling broken lamps.
- Ventilation: Use adequate general and local exhaust ventilation to maintain exposure levels below 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.
- Hygiene Practices: After handling broken lamps, wash hands thoroughly before eating, smoking or using toilet facilities.

Although JELIGHT COMPANY, INC. 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 or reliance on the information by any person.

Issued Date: April 28, 1995