# MATERIAL SAFETY DATA SHEET (MSDS)

## I. PRODUCT IDENTIFICATION

1. Product: Blacklight Fluorescent Lamp
2. Supplied By: Bower Products Ltd
3. Date: May 25, 2011.

## II. HAZARDOUS INGREDIENTS

THERE ARE NO KNOWN HEALTH HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT. If the 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) |
| Glass (Soda-Lime) | --- | 80-90 | 10.0 | 15.0 |
| Phosphor ($SrB_4O_7$: Eu) | 12650-28-1 | 1.5-2.5 | --- | --- |
| Mercury | 7439-97-6 | <0.05 | 0.025 | 0.1 Ceiling |

## III. PHYSICAL PROPERTIES

Not applicable to intact lamp.

## IV. FIRE & EXPLOSION HAZARDS

1. Flammability: Non-combustible
2. Fire Extinguishing Materials: Use extinguishing agents suitable for surrounding fire.
3. Special Firefighting Procedure: Use self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting activities.
4. Unusual Fire and Explosion Hazards: When exposed to high temperature, toxic fumes may be released from broken lamps.

## V. HEALTH HAZARDS

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.

1. OPERATING LAMPS:
   Blacklight fluorescent lamps produce UV (ultraviolet) radiation which can cause skin burns and/or eye injury if not properly shielded. Follow the directions and warnings accompanying the specific product to avoid personal injury.

2. LAMP MATERIALS:
   2.1. Glass: Glass dust is considered to be physiologically inert and as such, has an exposure limit of 15 mg/cubic meter for total dust and 5 mg/cubic meter for respirable dust.
   2.2. Phosphor: Inhalation of insoluble barium compounds has been reported to cause benign pneumoconiosis with no specific symptoms and no changes in pulmonary function.
   2.3. Mercury: Exposure to high concentrations of vapors for brief periods can cause acute symptoms such as

pneumoconiosis, 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.

3. EMERGENCY AND FIRST AID PROCEDURES:
   3.1. Glass Cuts: Perform normal first aid procedures. Seek medical attention as required.
   3.2. Inhalation: If discomfort, irritation or symptoms of pulmonary involvement develop, remove from exposure and seek medical attention.
   3.3. Ingestion: In the unlikely event of ingestion of a large quantity of material, seek medical attention.
   3.4. Contact, Skin: Thoroughly wash affected area with mild soap or detergent and water and prevent further contact. Seek medical attention if irritation occurs.
   3.5. Contact, Eye: Wash eyes, including under eyelids, immediately with copious amounts of water for 15 minutes. Seek medical attention.

## VI. REACTIVITY DATA

1. Stability: Stable
2. Conditions to avoid: None for intact lamps.
3. Incompatibility (materials to avoid): None for intact lamps.
4. Hazardous decomposition products (including combustion products): None for intact lamps.
5. Hazardous polymerization products: Will not occur.

## VII. PROCEDURES FOR DISPOSAL OF BROKEN LAMPS

Ventilate area where breakage occurred. Clean-up with mercury 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.