

## 1 Product and Company Identification

<b>Product identifier</b>	Low Pressure UV Lamp
<b>CAS #</b>	Mixture
<b>Product use</b>	Ultraviolet (UV) Lamp
<b>Recommended restrictions</b>	None known
<b>Manufacturer information</b>	Trojan Technologies 3020 Gore Road London, ON N5V 4T7 CA Phone: 519-457-3400 Phone: 888-220-6118
<b>Technical assistance #</b>	
Within North America	Phone: 866-388-0488
Outside North America	Phone: 519-457-2318

## 2 Hazards Identification

<b>Physical hazards</b>	Not applicable to intact lamps.
<b>Health hazards</b>	Not applicable to intact lamps.
<b>Environmental hazards</b>	Not applicable to intact lamps.
<b>WHMIS 2015 defined hazards</b>	
<b>Label elements</b>	
<b>Hazard symbol</b>	Not applicable to intact lamps.
<b>Signal word</b>	Not applicable to intact lamps.
<b>Hazard statement</b>	Not applicable to intact lamps.
<b>WHMIS 2015: Health Hazard(s) not otherwise classified (HHNOC)</b>	None known
<b>WHMIS 2015: Physical Hazard(s) not otherwise classified (PHNOC)</b>	None known
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known
<b>Supplemental information</b>	None

## 3 Composition/Information on Ingredients

<b>Components</b>	<b>CAS</b>	<b># Percent</b>
<b>Mercury</b>	7439-97-6	<0.1
<b>Composition Comments</b>	*Lamp consisting of quartz glass containing mercury.	

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## 4 First Aid Measures

<b>Inhalation</b>	Not applicable to intact lamps.
<b>Skin Contact</b>	Not applicable to intact lamps.
<b>Eye Contact</b>	Not applicable to intact lamps.
<b>Ingestion</b>	Not applicable to intact lamps.
<b>General Information</b>	<p>Burns caused by overexposure or severe injuries caused by fragment of quartz glass should be treated by a physician. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible).</p> <p>Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin.</p> <p>Keep out of reach of children.</p> <p>There are no known health hazards from exposure to intact, un-energized lamps.</p>

## 5 Fire Fighting Measures

<b>Flammable properties</b>	Not flammable by WHMIS/OSHA criteria.
<b>Suitable extinguishing media</b>	Extinguishing powder, foam, or water.
<b>Unsuitable extinguishing media</b>	Not available
<b>Specific hazards arising from the chemical</b>	Not available
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.
<b>Hazardous combustion</b>	May include and are not limited to: Mercury, metallic oxides.
<b>Products</b>	Lamp is not combustible.

## 6 Accidental Release Measures

<b>Personal precautions, protective equipment and emergency procedures</b>	<p>Keep unnecessary personnel away.</p> <p>Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.</p>
<b>Methods and materials for containment</b>	<p>In the event of a lamp breakage, appropriate action should be taken to contain the amalgam mercury. In a dry scenario where the lamp is not operating, solid amalgam mercury can be easily captured.</p> <p>In an operating closed- or open-channel system, in case of a lamp and sleeve breakage in a system treating the water flow, no containment measure is available.</p> <p>Prevent entry of the mercury into waterways, sewers, or other catchment systems.</p>
<b>Methods and materials for cleanup</b>	<p>If lamps are broken, ventilate the area where the breakage occurred. Take the usual precautions for collecting broken glass. Clean up with a mercury vacuum cleaner or with other suitable means that avoids dust and mercury vapor generation. <b>DO NOT USE A STANDARD VACUUM.</b> Place collected materials in a closed container to avoid generating dust. In the event of a lamp breakage, appropriate action should be taken to contain the spill. Additional guidance on cleaning up broken lamps may be obtained at: <a href="http://www2.epa.gov/cfl/cleaning-broken-cfl#instructions">http://www2.epa.gov/cfl/cleaning-broken-cfl#instructions</a>.</p>
<b>Environmental precautions</b>	<p>Do not discharge into lakes, streams, ponds or public waters. Do not contaminate water courses or ground. Prevent entry into waterways, sewers, basements or confined areas. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Prevent entry into waterways, sewers, basements or confined areas. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.</p>

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## 7 Handling and Storage

<b>Precautions for safe handling</b>	<p>Handle carefully to avoid breakage.</p> <p>Ensure adequate ventilation.</p> <p>Use good industrial hygiene practices in handling this material.</p>
<b>Conditions for safe storage, including any incompatibilities</b>	<p>Keep out of reach of children. Keep in properly labeled containers.</p>

## 8 Exposure Controls/Personal Protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Mercury (CAS 7439-97-6)	TWA	0.025 mg/m <sup>3</sup>

#### US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Mercury (CAS 7439-97-6)	TWA	0.1 mg/m <sup>3</sup>

<b>Exposure limits</b>	Exposure to mercury is only possible due to lamp breakage, refer <a href="#">Section 6</a> .
<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Use only under good ventilation conditions.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	<p>Avoid contact with eyes. Wear appropriate safety glasses with side shields (or goggles).</p> <p>In operation, UV lamps emit non-ionizing radiation in the 180~400 nanometer wavelength region of the electromagnetic spectrum. The UV light intensity greatly exceeds levels found in nature.</p> <p>Exposure can result in temporary or permanent eye injury, skin burns or other serious effects. Individuals present where UV lamps are in operation are at risk for UV exposure if the appropriate shielding and Personal Protective Equipment (PPE) are not used. Refer to product manuals and product warning labels for safe operating procedures and Personal Protective Equipment.</p>
<b>Skin protection:</b>	
<b>Hand protection</b>	Avoid contact with the skin. Wear impervious gloves. Confirm from a reputable supplier first. If glass is broken, use cut resistance gloves to prevent injury.
<b>Other</b>	<p>Emergency responders should wear impermeable clothing and footwear when responding to a situation where contact with the mercury liquid is possible.</p> <p>Wash hands IMMEDIATELY if mercury leakage occurs.</p> <p>Contaminated clothes must be changed immediately and discarded appropriately.</p>
<b>Respiratory protection</b>	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.
<b>Thermal hazards</b>	Not applicable
<b>General safety and hygiene consideration</b>	Ultraviolet radiation is emitted from the lamps. Use of approved safety glasses and/or face shield to block UV radiation. Handle in accordance with good industrial hygiene and safety practice.

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## 9 Physical and Chemical Properties

<b>Appearance</b>	Article (Solid)
<b>Color</b>	Colorless
<b>Form</b>	Quartz tube containing mercury and other metals
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	Not available
<b>Physical State</b>	Solid
<b>pH</b>	Not available
<b>Freezing point</b>	Not available
<b>Boiling point</b>	Not applicable
<b>Pour point</b>	Not available
<b>Evaporation rate</b>	Not available
<b>Flash point</b>	Not applicable
<b>Auto-ignition temperature</b>	Not available
<b>Flammability limits in air, upper, % by volume</b>	Not available
<b>Flammability limits in air, lower, % by volume</b>	Not available
<b>Vapor pressure</b>	In case of breakage, mercury vapor pressure: <0.01 mm Hg at room temperature.

## 10 Stability and Reactivity

<b>Reactivity</b>	Mercury is contained in a glass tube and therefore is not able to react with chemicals within the surrounding environment.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Conditions to avoid</b>	None identified for intact lamps.
<b>Incompatible materials</b>	Mercury is contained in a glass tube and therefore is not able to react with chemicals within the surrounding area.
<b>Hazardous decomposition products</b>	None identified for intact lamps. In case of breakage: May include and are not limited to: Mercury, metallic oxides.

## 11 Toxicological Information

Toxicological data		
Components	Species	Test Results
Mercury (CAS 7439-97-6)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Rat	2.3 ppm, 4 hr
<b>LD50</b>		
Not Available		

**Emergency overview** The lamp, which consists of quartz glass, is not dangerous under regular conditions. This item is a manufactured article. The mercury within the lamp is only available if the lamp is broken. Please follow standard health and safety guidelines for the use of this product.

**The following statements are applicable only in case of accidental breakage of the lamp:**

**Routes of exposure** Eye, Skin contact, Skin absorption, Inhalation, Ingestion.

**Information on likely routes of exposure:**

**Eyes** May cause irritation

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**Skin**

May cause irritation.

**US ACGIH Threshold Limit Values: Skin designation**

Mercury (CAS 7439-97-6) Hg Can be absorbed through the skin.

**US. NIOSH: Pocket Guide to Chemical Hazards**

Mercury (CAS 7439-97-6) VAP Hg Can be absorbed through the skin.

**Inhalation** May cause respiratory tract irritation.

**Ingestion** May cause stomach distress, nausea or vomiting.

**Dermal** May cause irritation.

**Chronic Effects** Long-term occupational exposure to moderate to high levels of mercury (0.035 to 0.1 mg/m<sup>3</sup>) has resulted in both nervous system and kidney effects. Significant toxicity has been observed in animals exposed to low concentrations.

**Carcinogenicity** Non-hazardous by WHMIS/OSHA criteria.

**ACGIH Carcinogens** Mercury (CAS 7439-97-6) A4 Not classifiable as a human carcinogen.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Mercury (CAS 7439-97-6) Volume 58 - 3 Not classifiable as to carcinogenicity to humans.

**Mutagenicity** Non-hazardous by WHMIS/OSHA criteria.

**Reproductive effects** Non-hazardous by WHMIS/OSHA criteria.

**Teratogenicity** Animal studies indicate that mercury exposure during pregnancy can cause subtle behavioral changes in offspring, in the absence of harmful effects in the mothers.

**Name of Toxicologically Synergistic Products** Not available

**Signs and symptoms** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

## 12 Ecological Information

**Ecotoxicity** See below

**Ecotoxicological data**
**Components**
**Species**
**Test Results**

Mercury (CAS 7439-97-6)

**Aquatic**

Fish LC50 Indian catfish (Heteropneustes fossils) 0.099 mg/l, 96 hours

**Persistence and degradability** Not available

**Bioaccumulation / Accumulation** Not available

**US CWA Bioaccumulative Chemicals of Concern: Listed substance**

Mercury (CAS 7439-97-6) Listed

US CWA Bioaccumulative Chemicals of Concern: Listed substance

**Mobility in environmental media** Not available

**Environmental effects** Not available

**Aquatic toxicity** Not available

**Partition coefficient** Not available

**Chemical fate information** Not available

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## 13 Disposal Information

<b>Disposal instructions</b>	Waste must be disposed of in accordance with federal, state/provincial and local environmental control regulations. This material and its container must be disposed of as hazardous waste.
<b>Waste from residues / unused Products</b>	Not available
<b>Contaminated packaging</b>	Not available

## 14 Transport Information

<b>UN number</b>	
TDG/US DOT	3506
IMDG/IMO	3506
IATA/ICAO	3506
Remarks TDG/US DOT	This product is not subject to the transportation regulations of dangerous goods by road (ADR) based on special provision 366 (<1 kg mercury per article).
Remarks IMDG/IMO	This product is not subject to the transportation regulations of dangerous goods by sea (IMDG) based on special provision 366 (<1 kg mercury per article).
* Remarks IATA/ICAO	For transport exemptions consult IATA special provisions A48, A69 and A191.
<b>UN proper shipping name</b>	
TDG/US DOT	MERCURY CONTAINED IN MANUFACTURED ARTICLES
IMDG/IMO	MERCURY CONTAINED IN MANUFACTURED ARTICLES
IATA/ICAO	MERCURY CONTAINED IN MANUFACTURED ARTICLES
<b>Transport hazard class(es)</b>	
TDG/US DOT:	8 (6.1)
IMDG/IMO:	8 (6.1)
IATA/ICAO:	8 (6.1)
<b>Packing group</b>	
TDG/US DOT:	none
IMDG/IMO:	none
IATA/ICAO:	none
<b>Environmental hazards</b>	
Marine pollutant	No

## 15 Regulatory Information

<b>Canadian federal regulations</b>	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.	
<b>Canada CEPA Schedule I: Listed substance</b>	Mercury (CAS 7439-97-6)	Listed
<b>Canada WHMIS Ingredient Disclosure: Threshold limits</b>	Mercury (CAS 7439-97-6)	0.1%
<b>WHMIS classification</b>	Exempt - Manufactured article	
<b>Occupational Safety and Health Administration (OSHA)</b>		
<b>29 CFR 1910.1200 hazardous chemical</b>	No	
<b>US federal regulations</b>	This product is a manufactured article and is exempt.	
<b>US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration</b>	Mercury (CAS 7439-97-6)	1.0 %

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Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Reportable threshold**

Mercury (CAS 7439-97-6) 10 lbs

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

Mercury (CAS 7439-97-6) Listed

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Mercury (CAS 7439-97-6) 1.0 % One-Time Export Notification only.

**US CWA Bioaccumulative Chemicals of Concern: Listed substance**

Mercury (CAS 7439-97-6) Listed

**US CWA Section 307(a)(1) Toxic Pollutants: Listed substance**

Mercury (CAS 7439-97-6) Listed

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Mercury (CAS 7439-97-6) Listed

**US CAA Section 112(i) High-Risk Hazardous Air Pollutants (HAPs): Weight factor**

Mercury (CAS 7439-97-6) 100

**US CAA Section 112(i) High-Risk Hazardous Air Pollutants (HAPs): Listed substance**

Mercury (CAS 7439-97-6) Listed

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Mercury (CAS 7439-97-6) Listed

**CERCLA (Superfund) reportable quantity**

Mercury: 1

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Immediate Hazard - Yes

Delayed Hazard - Yes

Fire Hazard - No

Pressure Hazard - No Reactivity

Hazard - No

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

**State regulations**

**US - California Hazardous Substances (Director's): Listed substance**

Mercury (CAS 7439-97-6) Listed

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Mercury (CAS 7439-97-6) Listed

**US - Illinois Chemical Safety Act: Listed substance**

Mercury (CAS 7439-97-6) Listed

**US - Louisiana Spill Reporting: Listed substance**

Mercury (CAS 7439-97-6) Listed

**US - Michigan Critical Materials Register: Parameter number**

Mercury (CAS 7439-97-6) Listed

**US - Minnesota Haz Subs: Listed substance**

Mercury (CAS 7439-97-6) Listed

**US - New Jersey RTK - Substances: Listed substance**

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Mercury (CAS 7439-97-6) Listed

**US - New York Release Reporting: Hazardous Substances: Listed substance**

Mercury (CAS 7439-97-6) Listed

**US - North Carolina Toxic Air Pollutants: Listed substance**

Mercury (CAS 7439-97-6) Listed

**US - Pennsylvania RTK - Hazardous Substances: All compounds of this substance are considered environmental hazards**

Mercury (CAS 7439-97-6) Listed

**US - Texas Effects Screening Levels: Listed substance**

Mercury (CAS 7439-97-6) Listed

**US - Washington Chemical of High Concern to Children: Listed substance**

Mercury (CAS 7439-97-6) Listed

**US. Massachusetts RTK - Substance List**

Mercury (CAS 7439-97-6) Listed

**US. Pennsylvania RTK - Hazardous Substances**

Mercury (CAS 7439-97-6) Listed

**US. Rhode Island RTK**

Mercury (CAS 7439-97-6) Listed

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).

## 16 Other Information

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

**NFPA Code**

 (Health: 1)  
 (Flammability: 0)  
 (Reactivity: 0)

**Issue Date**

15-February-2018

**Version #**

01

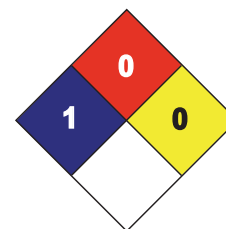
**Effective Date**

15-February-2018

**Prepared by**

Manufacturer Personnel

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0





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For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

In the event of a lamp breakage, appropriate action should be taken to contain the spill. Lamp breakage can occur in several scenarios, each requiring different action. In an operating closed- or open-channel system, a lamp and sleeve break will be very difficult to contain since the mercury vapor will quickly condense, be diluted, and subsequently carried away by the flowing wastewater/water stream. Please refer to the [Section 6](#) in order to respond to a lamp breakage.