

Safety Data Sheet

UV Germicidal Lamps

ClorDiSys Solutions, Inc.

Safety Data Sheet

Revision Date: 01/02/2019

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Date Reviewed: 01/02/2019

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Common Name: Ultraviolet Germicidal Lamp

Chemical Name: N/A

Product Use: UV-C Light Output

Supplier: ClorDiSys Solutions, Inc.
PO Box 549
Lebanon, NJ 08833

For Chemical Emergency Call PERS (24 Hours/Day, 7 Days/Week):

1-800-633-8253 (Domestic/Canada)

1-801-629-0667 (International)

2. HAZARDS IDENTIFICATION

THERE ARE NO KNOWN HEALTH HAZARDS FROM 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.

Chemical Name	CAS Number	% by weight	Exposure Limits in Air (mg/cubic meter ACGIH (TLV))	Exposure Limits in Air (mg/cubic meter OSHA (PEL))
Quartz (Fused Silica)	60676-86-0	75-90	0.1***	0.1***
Mercury*	7439-97-6	< 0.1	0.025	0.1 (ceiling)
Tin	7440-31-5 0	< 1	2.0	2.0
Argon	7440-37-1 0	< 1	**	None
Neon	7440-01-9 0	< 1	**	None
Xenon	7440-63-3 0	< 1	**	None

* 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.

** The TLV for a simple asphyxiant is a minimal atmospheric oxygen content of 18% by volume, at 1 atmospheric pressure.

*** When quartz tubing is heated to working temperatures, the silica vapors given off condense as amorphous silica. Amorphous silica has a TLV of 10mg.cu.m and a PEL of 6g/cu.m.

EFFECTS OF OVEREXPOSURE TO BROKEN LAMPS BY INHALATION, INGESTION, OR CONTACT 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. Chronic exposure may cause tremors and neuropsychiatric problems. May cause redness and irritation as a result of contact with skin and/or eyes.

Quartz (fused silica): Exposure to crystalline silica dust may cause scarring of the lungs (Silicosis), resulting in shortness of breath and coughing.

Inert gases: Inert gases such as Argon, Neon, and Xenon can cause asphyxia by displacing the ambient oxygen. Some symptoms of asphyxia are headache and dizziness.

Tin Solder: Ingestion or inhalation of dust or fumes must be avoided. Tin is not regarded as toxic but excessive exposure can cause fever, nausea, stomach cramps or diarrhea.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

THERE ARE NO KNOWN HAZARDS FROM EXPOSURE TO LAMPS THAT ARE INTACT

If the lamp is broken the following materials may be released.

Ingredient	CAS Number	Weight in Product %	Exposure Limits in Air (mg/cubic meter)	
			ACGIH (TLV)	OSHA (PEL)
Quartz (Fused Silica)	60676-86-0	75-90%	0.1***	0.1***
Mercury*	7439-97-6	<0.1	0.025	0.1 (ceiling)
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4. FIRST AID MEASURES

EYES:	Welders flash treatment.
SKIN:	Conjunctivitis.
INGESTION:	No first aid should be needed due to ultraviolet exposure.
INHALATION:	No first aid should be needed due to ultraviolet exposure.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS

SECTION 4 NOTES: Normal first aid procedure for glass cuts if such occur through lamp breakage. Effects of overexposure to skin and eyes usually disappear in 48 hours. Some individuals may have an abnormally increased sensitivity to the effects of UV light. This may be the result of a sensitizing chemical or prescribed drug. Sensitization will result in an exaggerated sunburn response. Further occupational exposure to UV should be limited and the individual should be referred to a physician.

5. FIRE FIGHTING MEASURES

Flash Point, °C:	Not Applicable
Autoignition Temperature, °C:	Not Applicable
Lower explosive Limit, %:	Not Applicable
Upper Explosive Limit, %:	Not Applicable
Fire Extinguishing Materials:	Use extinguishing agents appropriate for surrounding fire.
Special Fire Fighting Procedures:	Use a self-contained breathing apparatus to prevent inhalation of dust and/or fumes that may be generated from broken lamps during firefighting.
Unusual Fire and Explosion Hazards:	When exposed to high temperatures, toxic fumes may be released from broken lamps.

6. ACCIDENTAL RELEASE MEASURES

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- Ventilation:** Use adequate general and local exhaust ventilation to maintain exposure levels below the PEL and 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 PEL or TLV limits. All appropriate requirements set forth in 29 CFR 1910.134 should be met.
- Eye Protection:** OSHA specified safety glasses, goggle or face shield are recommended if lamps are being broken.
- Hygienic Practices:** After handling broken lamps; wash thoroughly before eating, smoking, or using toilet facilities.

7. HANDLING AND STORAGE****THIS SECTION ONLY APPLIES TO 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 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.
- Hygienic Practices:** After handling broken lamps, wash thoroughly before eating, smoking, or using toilet facilities.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

- 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 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.
- Hygienic Practices:** After handling broken lamps, wash thoroughly before eating, smoking, or using toilet facilities.

9. PHYSICAL AND CHEMICAL PROPERTIES

Ingredient	CAS Number	Weight in Product %	Exposure Limits in Air (mg/cubic meter)	
			ACGIH (TLV)	OSHA (PEL)
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10. STABILITY AND REACTIVITY

Stability Data:	Stable
Conditions/Hazards to Avoid:	None for intact lamps.
Incompatibility (Materials to Avoid):	None for intact lamps.
Hazardous Decomposition Reactions:	None for intact lamps.
Hazardous Polymerization Products:	Will not occur.

11. TOXOLOGICAL INFORMATION

No data available.

12. ECOLOGICAL INFORMATION

No data available.

13. DISPOSAL CONSIDERATIONS

Unbroken Lamps have PASSED TCLP (Toxicity Characteristic Leaching Procedure) Testing and can be considered non-hazardous waste.

If lamps are broken, 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. It is the responsibility of the generator to ensure proper classification of waste products. To that end, TCLP tests should be conducted on all waste products to determine the ultimate disposition in accordance with all applicable federal, state, and local regulations.

In 1990 the EPA developed the TCLP (Toxicity Characteristic Leaching Procedure) test to simulate the effect of disposing waste in conventional landfills under complex environmental conditions. The method is designed to determine the mobility of toxic material in liquid solid and multiphasic waste. The EPA developed the Toxicity Characteristic Leaching Procedure to determine the toxicity of waste. The TCLP test does NOT measure the total mercury content but rather the potential of mercury to leach into groundwater if a waste is disposed of in a landfill. TCLP is designed to simulate the leaching a waste will undergo if it is disposed in a sanitary landfill. This test includes mercury, lead, cadmium, and other hazardous materials. Passing this test for mercury for instance requires a yield of less than 0.2 milligrams per liter upon completion of the test. Lamps that PASS the TCLP are considered a non-hazardous waste by the EPA. We are proud to be among the first to offer the majority of our germicidal lamps as TCLP compliant. While lamps that pass TCLP may be classified as non-hazardous waste by the EPA, ClorDiSys Solutions and Clean Hospitals strongly encourage the recycling of spent germicidal lamps. Please contact our local environmental agency for assistance with lamp recycling or visit www.lamprecycle.org.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION:

Not regulated. SECTION 14 NOTES: These mercury containing lamps shipped in the original packaging are not regulated by air, truck, rail, or ocean shipment.

15. REGULATORY INFORMATION

U.S. ENVIRONMENTAL PROTECTION AGENCY:

RCRA / Universal Waste - lamps that are to be recycled should be placed in the original container or packaged to prevent breakage. The outer container should be dated and marked "Universal Waste."

U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

Ultraviolet exposure is limited to 1 milliwatt per centimeter squared. Ozone exposure is regulated at 0.1 parts per million (ppm).

16. OTHER INFORMATION

Revision Number:	1/2019
Section(s) Revised	Emergency contact number

Safety Data Sheet**UV Germicidal Lamps****Prepared By:**

ClorDiSys Solutions, Inc

The information in this Safety Data Sheet should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations, management and for persons working with or handling this product. The information presented in the SDS is premised upon proper handling and anticipated uses, and is for the material without chemical additions/alterations. We believe this information to be reliable and up-to-date as of the date of publication, but make no warranty that it is. Additionally, if this Safety Data Sheet is more than three years old, please contact the supplier at the phone number listed in Section 1 to make certain that this sheet is current. Clordisys Solutions, Inc License granted to make unlimited copies for internal use only.