



Section 1. Identification

- 1.1. Company: Lethan Corporation
Telephone: (513) 783-5673
4760 Industry Drive
Fairfield, OH 450143
- 1.2. Product: Hydrogen Gas Spectrum Tube
Product SKU: LC/SS13376-06

Section 2. Hazards Identification

NOTE

Grinding, sanding and/or mechanical manipulation of this product may change and alter the hazards and information listed in all of the following sections in ways that cannot be predicted.

2.1. Hazard Classification: Flammable Gas

2.2. OSHA Regulatory Status:

The amount of Hydrogen gas contained in each tube is negligible (less than 0.05% by volume and does not present a hazard even if the tube is accidentally broken. This product, when intact, is not known to be hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200. This product is exempt from OSHA's Hazard Communication Standard requirements for an MSDS because it meets the definition of an "article". An article is a manufactured item:

(1) which is formed to a specific shape or design during manufacture (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use: and (3) which does not release, or otherwise result in exposure to, a hazardous chemical under normal conditions of use. Any product which meets the definition of an "article" is exempt from the requirements of the Standard.

2.3. Hazardous Ingredients

Ingredient	CAS Number	OSHA PEL mg/m ³	ACGIH TLV	% By Weight
Inert Materials (glass, metal)	(7439-97-6)			> 99.0%

Hydrogen	(1333-74-0)	.05	0.025	<0.05%
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2.4. GHS Classification:

2.4.1. Acute toxicity oral: unknown; unlikely

2.4.2. Acute toxicity dermal: unknown; unlikely

2.4.3. Aspiration hazard: unknown; unlikely

2.5. Signal Word: Not Applicable

2.6. Hazard Statement:

This article is essentially inert under most conditions including those most likely to be present in a fire or other emergency situation.

2.7. Pictograms: Not Applicable

2.8. Precautionary Statement:

Call a POISON CENTER if you feel unwell.

This product is an electrical device that when used in or along with appropriate equipment designed for those products and constructed for use with such products, has no special health or safety concerns.

Additional information regarding applications or technical specifications for this product may be available at <https://sci-supply.com>

2.9. Description of any hazards not otherwise classified:

2.9.1. Primary routes of particulate entry: Ingestion, Eye/Skin Contact.

2.9.2. Skin Exposure:

2.9.2.1. Minor laceration and/or abrasion may occur if product is broken, sharp objects pierce coating and then come into contact with skin. Alteration/damage to the product can result in exposure to additional unforeseen and unpredictable hazards including but not limited to electrical hazards.

2.9.2.2. Refer to Sections 7 and 8 for additional information regarding Handling and Personal Protective Equipment (PPE).

2.9.3. Eye Exposure:

Injury may occur if eyes are subjected to prolonged direct exposure to bright light.

2.9.4. Respiratory Exposure:

Inhalable dust and particulates may be generated if product is pulverized. As with any particulate matter, respirable particles may cause mechanical irritation of the respiratory system and/or lung injury.

2.10. NFPA Rating: Not Applicable / Exempt – See statement in section 2.2

Section 3. Composition/Information on Ingredients

3.1. Hydrogen gas (CAS: 1333-74-0): < 0.05% by volume

Section 4. First Aid Measures

4.1. Eyes: Wear safety glasses with side shields to avoid chance of product getting into unprotected eye.

4.2. Skin:

4.2.1. Wash with soap and water.

4.2.2. Treat lacerations using standard first aid procedures.

4.2.3. Seek medical attention.

4.3. Inhalation: Not Applicable

4.4. Call poison center if you feel unwell.

4.5. Physicians: Treat according to person's condition and specifics of exposure.

4.6. WARNING! Stop using broken tubes immediately.

Dispose of broken tubes in accordance with section 13 below.

4.7. Emergency and First Aid Procedures: Apply normal first aid for glass cuts if such should occur through tube breakage.

Section 5. Fire Fighting Measures

Recommendations for fighting a fire caused by the chemical: Due to the extremely low concentration of gas contained in each tube, it is not likely that the release of the gas will cause a fire, nor will release during a fire require any special fire-fighting measures.

Section 6. Accidental Release Measures

6.1. Pieces of broken tube components may form sharp edges and fine particulate matter can be created. Sweep up loose material while wearing eye protection, respiratory protection, and gloves as needed to prevent irritation and/or lacerations. Place gathered material in an impermeable container and label appropriately.

6.2. Refer to Sections 5 and 8 for personal protective equipment requirements.

6.3. Refer to Sections 13 and 15 for possible additional guidance regarding regulatory requirements.

Section 7. Handling & Storage

7.1. Use normal good material and housekeeping practices to avoid breakage.

7.2. Always disconnect power before installing, inspecting, removing or replacing tubes.

7.3. After disconnecting power allow sufficient time for tube to cool before attempting to make contact. Heat resistant gloves may be suggested for additional safety.

7.4. Follow NFPA 654 (dusts) and 484 for metal dust for managing dust hazards.

Section 8. Exposure Controls/Personal Protection

- 8.1. Appropriate Engineering Controls:
Do not use any spectrum tube in applications where humans and/or animals will be subjected to direct long-term uncomfortable visual exposure to light emissions as this could result in eye injury. If tube appears damaged, remove power and then replace the product. If any materials are to be processed in such a manner as to create particulates (mechanical breaking as part of end of product life disposal and recycling), use exhaust ventilation and/or wet working methods to minimize release of particulate to workroom air and employee breathing

- 8.2. Personal Protective Equipment
 - 8.2.1. Respiratory:
None required under normal use conditions. Appropriate local ventilation or an air purifying respirator should be used if the articles are being abraded or reduced in size using mechanical methods.
 - 8.2.2. Skin Protection:
 - 8.2.2.1. If risk of breakage is present impermeable and/or cutresistant gloves should be worn.
 - 8.2.2.2. Operating tubes are hot. Use of temperature resistant gloves is recommended.
Always allow sufficient time for product to cool prior to touching.
 - 8.2.3. Eye/Face Protection:
Wear safety glasses with side shields to avoid chance of product getting into unprotected eye.

- 8.3. General Hygiene Considerations:
Workers should wash their face and hands prior to eating, drinking, or smoking.

- 8.4. Additional Exposure Information: Not Applicable

Section 9. Physical and Chemical Properties

- 9.1 Physical state: Gas
- 9.2 Appearance & odor: Colorless, odorless gas
- 9.3 Odor threshold (PPM): Odorless
- 9.4 Vapor pressure: Gas@ 70°F (21°C)
- 9.5 Vapor sp. gravity (air=1): 0.069 @ 70°F (21°C)
- 9.6 Boiling point: -252.8°C (760 mmHg) / -423.0°F
- 9.7 Freezing point: -259°C / -434.6°F
- 9.8 Solubility in water (%): Slight.

Section 10. Stability and Reactivity

- 10.1. Chemical Stability: Product is stable
- 10.2. Hazardous polymerization Conditions: Will not occur
- 10.3. Conditions to avoid:
Rapid temperature change may result in broken envelope.
- 10.4. Materials to Avoid (incompatible):
Oxidizing materials (oxygen, chlorine, bromine, chlorine bromide, nitrogen trifluoride) Metal oxides, metal salts, halo carbons.

Section 11. Toxicological Information

- 11.1. Acute toxicity oral: None known
- 11.2. Carcinogenicity:
 - 11.2.1. Some components may contain carcinogens listed by IARC, but these quantities typically are well below 0.1% of the total.
- 11.3. Acute toxicity inhalation: None known
- 11.4. Skin irritation / corrosion: None known
- 11.5. Serious damage to eyes / eye irritation: None known
- 11.6. Skin and respiratory sensitization: None known
- 11.7. Specific target organ toxicity following single or repeated exposure: None known
- 11.8. Toxicity following single exposure:
 - Oral: None known
 - Inhalation: None known
- 11.9. Toxicity repeated exposure: None known
- 11.10. Reproductive toxicity: Not applicable/determined
- 11.11. STOT - single exposure: Not applicable/determined
- 11.12. STOT - repeated exposure: Not applicable/determined
- 11.13. Aspiration hazard: Not applicable/determined

Section 12. Ecological Information

12.1.	Air:	Atmospheric contamination should not occur
12.2.	Water:	Solid; little to no solubility; may sink in water
12.3.	Soil:	Transformation in landfill unlikely
12.4.	Degradation:	not biodegradable
12.5.	Toxicity to water organisms:	unlikely/low risk
12.6.	Toxicity to soil organisms:	unlikely/low risk
12.7.	Bioaccumulation:	Solid; little to no solubility
12.8.	Water treatment plants:	Solid; little to no solubility; unlikely to affect bacteria

Section 13. Disposal Considerations

- 13.1. Normal precautions should be taken for the collection of glass particles in the event a tube is broken.
- 13.2. Waste Disposal Method: All mercury tubes contain some amount of mercury. When a mercury vapor tube is to be disposed, it is subject to the current EPA Toxicity Characteristic Leaching Procedure (TCLP) disposal criteria. This test is used to determine if an item can be managed of as hazardous or non-hazardous waste
- 13.3. All disposal options should be evaluated with respect to federal, state, and local requirements. Before disposing of waste lamps, check with federal, state, and/or local officials for current guidelines and regulations.
- 13.4. Respiratory Protection: None.
 - 13.4.1. NIOSH-approved respirator should be used if large quantities of lamps are being broken for disposal.
- 13.5. Ventilation: Avoid inhalation of any airborne dust. Provide local exhaust when disposing of large quantities of lamps. Hand and Eye Protection: Appropriate hand and eye protection should be worn when disposing of lamps and/or handling broken glass.

Section 14. Transport Information

- 14.1. As a product, these mercury-containing tubes, when shipped in the manufacturer's original packaging, may be regulated for air, truck, or ocean shipment. As a waste, these lamps may be regulated in various states and local communities. This safety data sheet does not constitute "knowledge of the waste" in certain jurisdictions.

Section 15. Regulatory Information

- 15.1. The contents of this SDS comply with United Nations (GHS) or Globally Harmonized System of Classification and Labeling of Chemicals.
- 15.2. U.S. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65):
This product may contain chemicals or product chemicals when heated known to the state of California to cause cancer, birth defects, or other reproductive harm.
- 15.3. Section 302 Extremely Hazardous Substances (40 CFR 355): None
- 15.4. Section 304 CERCLA Hazardous Substances (40 CFR 302): None
- 15.5. Section 311/312 Hazard Class (40 CFR 370):
 - 15.5.1. Acute: No
 - 15.5.2. Chronic: No
 - 15.5.3. Fire: No
 - 15.5.4. Pressure: No
 - 15.5.5. Reactive: No
- 15.6. Section 311 Toxic Chemicals (40 CFR 372):
None present in a regulated quantity nor intentionally added
- 15.7. As an article, these mercury-containing tubes, when shipped in the manufacturer's original packaging, may be regulated for air, truck, or ocean shipment. As a waste, these tubes may be regulated in various states and local communities.

Section 16. Other Information

- 16.1. Preparer: Lethan Corporation Technical and Testing Department
- 16.2. Disclaimer:

The information contained in this Material Safety Data Sheet is supplied in conformity with 29 CFR 1910.1200 of the OSHA Hazard Communication Standard. The information set forth herein is presented in good faith and believed to be correct. No representations are made as to the completeness or accuracy thereof. The purchaser is solely responsible for compliance with all applicable laws and regulations concerning the use of this product. Neither Preparer nor Company assumes any liability or responsibility for its use.