太和气体(荆州)有限公司
Taihe Gases(Jingzhou)Limited

Material Safety Data Sheet for:

Hydrogen selenide (H2Se)

1. IDENTIFICATION

Product Name：Hydrogen selenide

Other Name：

Recommended use of the chemical and restrictions on use：Used in semiconductor materials, and in the production of metal selenide and selenium-containing organic compounds, etc.

Supplier's details：

Company name:Taihe Gases (Jingzhou) Limited

Factory address: No.20 Jingjian Road,Jingzhou Development Zone, Jingzhou City, Hubei Province, P. R. China

Tel: 86-0716－8359158 Fax: 86-0716-8336190

Emergency phone number：0532-83889090

2. HAZARDS IDENTIFICATION

Emergency Overview：

Extremely flammable

Cause severe eye irritation

Organ damage caused by one contact

Chronic or recurrent contact can cause organ damage

Very toxic to aquatic organisms; is very toxic to aquatic organisms and has long lasting effects

GHS Label elements, including precautionary statements:

Potential Health Effects

Inhalation: May be fatal if inhaled. Irritating to respiratory system. Can cause severe lung damage. May be fatal if inhaled. Delayed adverse effects possible. Prolonged exposure to small concentrations may result in pulmonary edema. Delayed fatal pulmonary edema possible.

Eye contact: Irritating to eyes. Causes severe eye burns. May cause permanent eye injury.

Skin contact: Contact with liquid may cause cold burns/frost bite. Causes skin irritation. Causes skin burns.

Aggravated Medical Condition: Acute or chronic respiratory conditions.
Target Organs: Eyes. Respiratory tract. Skin.
Symptoms: Irritating to eyes and respiratory system. Cough.

3. COMPOSITION/INFORMATION ON INGREDIENTS

component：

Components	CAS No.	Concentration(Volume)
H2Se	7683-07-5	99.995%

4. FIRST AID MEASURES

General advice:

Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped. Use chemically protective clothing.

Eye contact:

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Keep eye wide open while rinsing.

Skin contact:

Flush with copious amounts of water until treatment is available. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and badly.

Ingestion:

Ingestion is not considered a potential route of exposure.

Inhalation:

Move to fresh air. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Mouth to mouth resuscitation is not recommended. If unconscious, place in recovery position and seek medical advice. In case of shortness of breath, give oxygen. Consult a doctor.

Notes to physician Treatment：

Rinse your mouth with water. No vomiting. Drink milk or egg whites. Immediate medical treatment.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Fire extinguishing with fog water, foam, dry powder and carbon dioxide.

Specific hazards:

This product is flammable, poisonous and strong irritant. Mixed with air can form explosive mixtures. In case of flame, high heat energy causes combustion explosion. A violent reaction to the oxidant contact.

Special protective equipment for fire-fighters:

Use self-contained breathing apparatus and chemically protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Evacuate personnel to safe areas. Ventilate the area. Approach suspected leak areas with caution. Use self-contained breathing apparatus or positive pressure air line with mask and escape pack in areas where concentration is unknown or above the exposure limits.

Environmental precautions:

Preventing the diffusion of gases through sewers, ventilation systems and restricted spaces.

Methods for cleaning up:

Dilute and dissolve with spray-like water. The construction of a dike or pit to collect large quantities of waste water produced. If possible, send the leaked gas to an open area or install a proper nozzle to burn it off. Leak containers need to be properly treated, repaired, inspected and then used.

Additional advice:

Large releases may require considerable downwind evacuation. If possible, stop flow of product. Increase ventilation to the release area and monitor concentrations. If leak is from cylinder or cylinder valve, call the Taihe gas emergency telephone number. If the leak is in the user's system, close the cylinder valve, safely vent the pressure, and purge with an inert gas before attempting repairs.

7. HANDLING AND STORAGE

Handling：

Strictly airtight, provide adequate local exhaust and full ventilation. Operators must undergo specialized training and strictly follow the operating procedures. It is recommended that the operator wear a self priming filter type gas mask (full cover), wear blanket protective clothing, wear rubber gloves. Stay away from fire, heat, smoking is prohibited in the workplace. Use of explosion-proof ventilation systems and equipment. Prevent gas from leaking into the workplace air. Avoid contact with oxidants and acids. Light and unload lightly when handling to prevent breakage of cylinders and accessories. Equipped with corresponding varieties and quantities of fire equipment and leakage emergency treatment equipment.

Storage：

Store in a cool, ventilated warehouse. Keep away from fire and heat. The temperature of the storehouse should not exceed 30°C, relative humidity not exceeding 80%. Keep the container sealed. Should be stored separately from oxidants, acids and edible chemicals, avoid mixed storage. The use of explosion-proof lighting, ventilation facilities. The use of mechanical equipment and tools that produce sparks is prohibited. Leakage emergency treatment equipment should be available in the storage area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures：

Strictly closed, providing adequate local exhaust and full ventilation. Provides a safe shower and eye wash equipment.

Personal protective equipment：

Respiratory protection: Self-priming filter gas masks (full face masks) must be worn when the concentration in the air exceeds the standard. Air respirators should be worn during emergency rescue or evacuation.

Hand protection: Wearing rubber gloves.

Eye protection: Wearing chemical safety glasses.

Skin and body protection: Wear tape anti-virus clothing.

Exposure limit(s): No data is available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquefied gas
Color:	Colorless
Odor:	Bad smell.
Molecular Weight:	80.98g/mol

Relative vapor density:	no date
Relative density:	2.12 (water = 1)
Vapor pressure:	53.32 kpa (-53.6°C)
Boiling point/range:	-41.1 °C
Critical temperature:	no date
Melting point/range:	-66.1 °C
Water solubility:	Dissolved in water, sulfur dioxide.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Materials to avoid: Oxidizing agent, Acid type

Keep away from fire and heat

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard:

Ingestion: 8h- LC_{50}: 300ppb.

Ingestion – No data is available on the product itself.

Inhalation:No data is available on the product itself.

Skin: No data is available on the product itself.

Chronic Health Hazard:

This product is toxic, causing severe irritation of the upper respiratory tract upon inhalation, and irritation of the eyes and theskin on contact.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Aquatic toxicity: No data available.

Toxicity to other organisms: No data available.

Persistence and degradability

Mobility: No data available.

Bioaccumulation: No data is available on the product itself.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unusedproducts:

In accordance with local and national regulations. Return unused product in orginal cylinder to supplier. Contact supplier if guidance is required. Must not be discharged to atmosphere.

Contaminated packaging: Return cylinder to supplier.

14. TRANSPORT INFORMATION

Dangerous goods number：23007

UN No：2202

Proper shipping name：Hydrogen selenide

Class：2.3

Risk label：Toxic gas; flammable gas

Packing：gas cylinder

Transportation considerations：When the railway is transported, it must be reported to the Railway Bureau for trial operation. The trial period is two years. After the trial operation, the trial report was written and the Ministry of Railways officially announced the transportation conditions. Railway transportation should be carried out in strict accordance with the dangerous goods fitting table in the Dangerous Goods Transportation Regulations of the Ministry of Railways. The transport vehicle shall have a dangerous cargo transport sign and a satellite positioning device with a driving record function. Without the approval of the public security organ, the transport vehicle shall not enter the restricted traffic area of the dangerous chemicals transport vehicle. When transporting gas cylinders, they should be placed neatly. When placed horizontally, the ends of the bottles should be aligned. When standing, properly fix them to prevent the cylinders from falling over. Wear caps (except for cylinders with protective cover), lightly load and unload. slip, roll, touch, hit, hit the cylinder. Transportation vehicles should be equipped with the appropriate variety and quantity of fire-fighting equipment. The vehicle exhaust pipe carrying the item must be equipped with a fire-blocking device, and it is forbidden to use mechanical equipment and tools that are prone to sparks. It is strictly forbidden to mix and transport with oxidants, acids, food chemicals, etc. Summer should be transported in the morning and evening to prevent sun exposure. Keep away from fire and heat sources when you stop. When transporting by road, it is necessary to follow the prescribed route, and it is forbidden to stay in residential areas and densely populated areas. It is forbidden to slip when transporting by rail.

15. REGULATORY INFORMATION

Domestic chemical safety management regulations：

GB16483-2008，GB13690-2009，GB6944-2005，GB/T15098-2008，GB18218-2009，GB15258-2009，GB6944-2005，GB190-2009，GB191-2009，GB12268-2008，GB/T15098-2008，GB30000.2-2013～GB30000.29-2013

16. OTHER INFORMATION

Referance:

UN RTDG

Globally Harmonized System of Classification and Labelling of Chemicals

ICSC

Apply date: 2018-06-04