

## Chemical Safety Data Sheet

### 1. IDENTIFICATION

**Product Name :** Carbonyl sulphide

**Other Name :** Carbonyl sulphide

**Chemical formula:** COS

**Recommended use of the chemical and restrictions on use :** General Industrial

**Supplier's details :**

LINGGAS(TIANJIN),LIMITED

Hexiwu Town, Wuqing District, Tianjin 301714, P.R. China

Tel : 022-29437740 ; Fax : 022-29437745 ; Email : info@linggas.com

**Emergency phone number :** 022-29437747

### 2. HAZARDS OVERVIEW

**Emergency Overview :**

Mixed with air may form explosive mixtures. Sparks or heat can lead to an explosion. On combustion would produce the toxic gas, sulphur dioxide (SO<sub>2</sub>). React violently with oxidant. Contact with water or vapour liberates flammable and toxic gas.

GHS: toxic gas-Category 2 inflammable gas-Category 1 pressurized gas- liquefied gas

**GHS Label elements, including precautionary statements:**



Risk phrase : danger

Hazard statement: Inhale deadly, Highly Flammable Gases,Containing pressurized gas, heated may explode.

Precautionary statements:

Precautionary measures:

No food, water and smoking in the site.

Operate in well ventilated place only.

Keep out heat, sparks, naked flames, hot surfaces. No smoking.

Wear gloves, gas mask, glasses.

Incident response:

Rewarming the injured part in warm water 38-42°C. Wash with water and soap as a precaution. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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. In case of shortness of breath, give oxygen. Consult a doctor.

Fire extinguishing agent :

Dry chemical, carbon dioxide. Water and foam extinguishing is prohibited.

Accidental release measures: Cut off the leak.

**Physical and chemical hazards:**

Liquefied compressed gas.

**Health hazard:**

Irritates the lungs and affects the central nervous system. Severe intoxications can cause convulsion, even respiratory paralysis and death.

**Environmental Effects**

Dangerous for the environment.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components:

Components	CAS No.	Concentration(Volume)
Carbonyl sulphide	463-58-1	100%

**4. FIRST AID MEASURES**

**Skin contact:**Wash frost-bitten areas with plenty of water. Do not remove clothing. Cover wound with sterile dressing.

**Eye contact:** In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**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. In case of shortness of breath, give oxygen. Consult a doctor.

**Ingestion:** Ingestion is not considered a potential route of exposure.

**Notes to rescuers:**

Self-contained air breathing apparatus is needed before enter the leaking site.

**Notes to physician treatment:** NA

**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media:**

Dry chemical, carbon dioxide. Water and foam extinguishing is prohibited.

**Specific hazards:**

Gas is heavier than air and may collect in low areas or travel along the ground where there may be an ignition source present. If flames are accidentally extinguished, explosive re-ignition may occur; therefore, appropriate measures should be taken (e.g. total evacuation to protect persons from cylinder fragments and toxic fumes should a rupture occur). Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Combustion by-products may be toxic. Move away from container and cool with water from a protected position. Keep adjacent cylinders cool by spraying with large amounts of water until the fire burns itself out. Do not allow run-off from fire fighting to enter drains or water courses. If possible, shut off the source of gas and allow the fire to burn itself out. Extinguish fire only if gas flow can be stopped. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.

**Special protective equipment for fire-fighters:**

Use self-contained breathing apparatus.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions:**

Evacuate personnel to safe areas. Remove all sources of ignition. 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. Never enter a confined space or other area where the flammable gas concentration is greater than 10% of its lower flammable limit. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ventilate the area.

**Environmental precautions:**

Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

**Methods for cleaning up:**

Ventilate the area. Approach suspected leak areas with caution. Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. (Ground free from frost).

**Additional advice:**

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 Air Products 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 :

Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C (122°F). Only experienced and properly instructed persons should handle compressed gases. Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use. When doubt exists as to the correct handling procedure for a particular gas, contact the supplier. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Use an adjustable strap wrench to remove over-tight or rusted caps. Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials.

### Storage :

Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air. Full containers should be stored so that oldest stock is used first. Observe all regulations and local requirements regarding storage of containers. Stored containers should be periodically checked for general condition and leakage. Local codes may have special requirements for toxic gas storage. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. The container valves should be tightly closed and where appropriate valve outlets should be capped or plugged. Container valve guards or caps should be in place.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Engineering measures :

Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

### Personal protective equipment :

**Respiratory protection:** Keep self contained breathing apparatus readily available for emergency use. 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. Users of breathing apparatus must be trained.

**Hand protection:** Butyl rubber, chlorinated polyethylene, neoprene, nitrile, or polyvinyl rubber gloves. Sturdy work gloves are recommended for handling cylinders. The breakthrough time of

the selected glove(s) must be greater than the intended use period.

**Eye protection:** Safety glasses recommended when handling cylinders. A full faceshield should be worn in addition to safety glasses when connecting, disconnecting or opening cylinders.

**Skin and body protection:** Acid resistant gloves (e.g. butyl rubber, neoprene, polyethylene) and splash suit when connecting, disconnecting or opening cylinders. Safety shoes are recommended when handling cylinders. Wear as appropriate: Flame retardant protective clothing.

**Special instructions for protection and hygiene :** Provide good ventilation and/or local exhaust to prevent accumulation of concentrations above exposure limits. Ensure adequate ventilation, especially in confined areas.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquefied gas.
Color:	Colorless gas
Odor:	Odor can persist. Poor warning properties at high concentrations. Rotten eggs.
Molecular Weight:	60 g/mol
Relative vapor density:	2 (air = 1)
Relative density:	1.2 (water = 1)
Vapor pressure :	159.54 psia (11.00 bar) at 68 °F (20 °C)
Boiling point/range:	-58 °F (-50°C)
Critical temperature:	216 °F (102 °C)
Melting point/range:	-218°F (-139 °C)
Autoignition temperature:	Not known.
Upper flammability limit:	28.5 %(V)
Lower flammability limit:	12%(V)
Water solubility:	1.447 g/l

## 10. STABILITY AND REACTIVITY

**Stability:** Stable under normal conditions.

**Conditions to avoid:** Heat, flames and sparks.

**Materials to avoid:** Nickel.

Oxidizing agents.

Oxygen.

**Hazardous decomposition products :** Hydrolysis products: Hydrogen Sulfide.

**Hazardous reactions :** May react with Nickel to form highly toxic Nickel carbonyl.

## 11. TOXICOLOGICAL INFORMATION

**Acute Health Hazard:**

**Ingestion:** No data is available on the product itself.

**Inhalation:** LC50 (1h): 1700ppm. Species: Rat.

**Dermal :** No data is available on the product itself.

**Eye irritation/corrosion :** Eye irritation.

**12. ECOLOGICAL INFORMATION****Ecotoxicity effects**

**Aquatic toxicity:** No data is available on the product itself.

**Toxicity to other organisms:** No data available.

**Persistence and degradability**

**Biodegradability :** No data is available on the product itself.

**Mobility:** No data available.

**Bioaccumulation:** No data is available on the product itself

**Further information:**

Toxic to aquatic organisms. Endangering to drinking water.

**13. DISPOSAL CONSIDERATIONS**

**Waste from residues / unused products:** In accordance with local and national regulations.

Contact supplier if guidance is required. Return unused product in original cylinder to supplier.

Must not be discharged to atmosphere.

**Contaminated packaging:** Return cylinder to supplier.

**14. TRANSPORT INFORMATION**

**UN No :** 2204

**Proper shipping name :** Carbonyl sulfide

**Class :** 2.3

**Categories of packing:** II -Class

**Risk label :** toxic gas, flammable gas.



**Packing :** gascylinder

**Further Information :** Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load

and knows what to do in the event of an accident or an emergency.

#### 15. REGULATORY INFORMATION

The following laws, regulations and standards have made the clear legal provisions to the safe use, storage, transportation, loading and unloading, classification and marking of chemicals.

Production safety law of the People's Republic of China;

Occupational Disease Prevention and Treatment of the People's Republic of China;

Environmental Protection Law of the People's Republic of China;

Hazardous Chemicals Control Ordinance;

The list of dangerous chemicals;

The general principles of the classification of dangerous chemicals and the risk of the public  
(GB 13690-2009)

#### 16. OTHER INFORMATION

**Reference:**

UN RTDG

Globally Harmonized System of Classification and Labeling of Chemicals

ICSC

**Apply date:** 2013-2-25

**Revision Date:** 2015-12-20

**Edit department:** Safety and Environmental Protection Department

**Data audit unit:** LINGGAS TIANJIN LIMITED.

**Edit Description:** Modify when policies change or every 3 years.