

Safety Data Sheet: Dimethyl Disulfide (DMDS)

1. Identification

Product	Dimethyl Disulfide (DMDS); CAS 624-92-0; EC 210-871-0
Use	Professionally supervised refinery catalyst sulfiding and chemical synthesis.
Company	Hainan Zhongxin Chemical Co., Ltd. (ZXCHEM)
Address	Room 1001, Building A, Caohejing Center, No. 1520 Gumei Road, Xuhui District, Shanghai, China
Telephone / email	+86-21-54265599 / sales@zxchem.com.cn
Emergency contact	ZXCHEM office number above, office hours, China time (UTC+8). For urgent medical assistance contact local emergency services.
Scope	Reference safety information for Dimethyl Disulfide (DMDS). The reference composition, concentration and supply-grade differences are described in Section 3. This document does not certify the composition or transport status of a specific delivered batch or a different formulation.

2. Hazards Identification

Classification	Flammable liquid 2; acute oral toxicity 3; acute inhalation toxicity 3; eye irritation 2; skin sensitization 1; target-organ single exposure 1 and 3; acute and chronic aquatic hazard 1.
Signal word / symbols	Danger; GHS02, GHS06, GHS08, GHS09
Hazard statements	H225: high flammability. H301/H331: toxic ingestion and inhalation. H317/H319: allergic skin effects and serious eye irritation. H336/H370: central nervous system effects and organ damage from inhalation. H410: severe persistent aquatic toxicity.
Prevention	Use adequate ventilation; avoid inhaling mist. Prevent skin and eye contact. Wear suitable chemical-resistant gloves and eye protection. Wash after handling; keep food and drink out of the work area.
Response	After exposure, stop work and seek medical advice. For severe exposure obtain urgent medical care. Rinse contaminated skin or eyes with water; move an inhalation casualty to fresh air.
Environment	Prevent uncontrolled release to drains, soil or surface water. Collect spills for appropriate disposal.



3. Composition / Information on Ingredients

Reference ingredient	Dimethyl disulfide, CAS 624-92-0, EC 210-871-0; 95–100% in the selected substance reference. Supply assay ≥99.8%; no solvent is added to this reference composition.
Supply grade	Purity ≥99.8%
Applicability	The cited concentration or purity describes the reference material. It is not a certificate of analysis for the delivered batch; different solvents or dilutions require the matching supplier safety document.

4. First-Aid Measures

General	Protect rescuers and obtain urgent medical advice after ingestion, inhalation or significant exposure. Provide product information to the clinician.
Inhalation	Move the casualty to fresh air without exposing rescuers. Obtain urgent medical assistance. Trained personnel should use appropriate medical equipment for breathing support.
Skin	Remove contaminated clothing and wash thoroughly with water. Seek medical attention for irritation or allergic symptoms.
Eyes	Immediately irrigate gently with clean water; remove contact lenses when easy and continue rinsing. Obtain medical attention for eye exposure.
Ingestion	Contact emergency medical services immediately. Do not induce vomiting except under direct clinical instruction because aspiration is possible. Give nothing orally to an unconscious person.
Clinical treatment	Treatment is directed by medical personnel. Monitor respiratory and neurological effects.

5. Fire-Fighting Measures

Extinguishing media	Use foam, dry chemical or carbon dioxide for the liquid fire; water spray can cool exposed closed containers.
Fire hazards	Flammable vapor can spread along floors and flash back. Fire or heated containers can release hazardous sulfur-containing combustion gases.
Firefighter protection	Use self-contained breathing apparatus and full protective clothing. Approach from a protected location and control contaminated firewater.

6. Accidental Release Measures

Personnel	Isolate the spill and provide ventilation. Use chemical-resistant gloves and eye protection; avoid contact and mist exposure.
Environment	Contain the release and protect drains and waterways. Report significant environmental contamination to the responsible authority.
Cleanup	Stop the leak if safe. Absorb liquid with a compatible inert material and collect in closed labelled containers. Do not wash into drains.

7. Handling and Storage

Handling	Use controlled transfer and effective ventilation. Avoid generating mist and prevent contamination of the work area.
Storage	Store tightly closed in a dry, cool, well-ventilated flammable-liquid area. Keep away from heat, sparks, flames and incompatible oxidizing agents; restrict access to trained personnel.
Incompatibilities	Strong oxidizers, strong alkalis and strong reducing agents; avoid uncontrolled reactions.
Specific use	Evaluate compatibility and appropriate operating conditions in the complete formulation before industrial use.

8. Exposure Controls / Personal Protection

Exposure limits	Selected reference: ACGIH TWA 0.5 ppm. Verify current local limits; use closed transfer and extraction to control vapor exposure.
Engineering controls	Use local extraction where mist can be generated. Maintain accessible eyewash and emergency washing facilities.
Personal protection	Wear chemical-resistant gloves selected for the task, suitable protective clothing and splash goggles. Add face protection for splash-prone tasks.
Respiratory protection	Use a properly selected respirator under a respiratory-protection program where engineering controls do not adequately limit airborne exposure.
Hygiene	Wash after handling, remove contaminated clothing promptly and do not eat, drink or smoke in the work area.

9. Physical and Chemical Properties

Appearance	Clear, colorless to pale yellow liquid
Formula / molecular weight	C ₂ H ₆ S ₂ / 94.20 g/mol
Flash point, closed cup	15°C
Boiling point, reference	109°C
Melting point, reference	-85°C
Density, manufacturer reference	1.046 g/cm ³ at 25°C
Water solubility, reference	2.7 g/L at 20°C
Dynamic viscosity, reference	0.62 mPa·s at 20°C
Other properties	Product-specific values for odor threshold, vapor pressure, partition coefficient, autoignition temperature and viscosity are not supplied by the selected reference set. No values are inferred.

10. Stability and Reactivity

Stability	Handle and store under the recommended conditions. Prevent contamination and unnecessary heating.
Incompatibilities	Strong oxidizers, strong alkalis and strong reducing agents; avoid uncontrolled reactions.
Decomposition	Fire produces carbon and sulfur oxides. Vapors can form explosive mixtures with air.

11. Toxicological Information

Exposure effects	Toxic ingestion or vapor exposure; allergic skin response, eye irritation and respiratory/central nervous system effects.
Reference classification	Flammable liquid 2; acute oral toxicity 3; acute inhalation toxicity 3; eye irritation 2; skin sensitization 1; target-organ single exposure 1 and 3; acute and chronic aquatic hazard 1.
Toxicological data	substance reference: oral rat LD ₅₀ 190 mg/kg; dermal rat LD ₅₀ >5,000 mg/kg. Inhalation exposure can affect the respiratory tract and central nervous system; numerical values are reference study data.

12. Ecological Information

Environmental effects	High acute and chronic aquatic hazard. Capture spills and contaminated water; prevent discharge to soil, drains and surface water.
Controls	Prevent uncontrolled release, collect spills and dispose of contaminated material through an authorized route.
Assessment	No product-specific PBT/vPvB assessment is claimed. Absence of data does not establish absence of environmental effects.

13. Disposal Considerations

Product	Collect surplus product and contaminated cleanup material for disposal by an authorized chemical-waste contractor in accordance with local requirements.
Packaging	Containers may retain product residues. Do not reuse contaminated packaging without an approved cleaning process; use an authorized disposal route.

14. Transport Information

Classification	Class 3 — Flammable (subsidiary Class 6.1)
UN number	UN 2381
Shipping name	Dimethyl disulphide
Class / packing group	ADR/RID, IMDG and IATA: Class 3, subsidiary 6.1, packing group II; IMDG marine pollutant.
Transport precautions	Protect packaging and closures from damage, secure loads and prevent releases. This reference is not a shipping declaration for a specific consignment.

15. Regulatory Information

Identity	Dimethyl Disulfide (DMDS); CAS 624-92-0; EC 210-871-0
HS reference	293090; reference heading rather than a destination customs ruling.
Compliance	Apply applicable workplace, environmental and transport rules. A raw-material listing does not establish finished-product authorization.
Assessment	No ZXCHEM-specific chemical safety assessment or destination registration is asserted.

16. Other Information

Hazard meanings	H225: high flammability. H301/H331: toxic ingestion and inhalation. H317/H319: allergic skin effects and serious eye irritation. H336/H370: central nervous system effects and organ damage from inhalation. H410: severe persistent aquatic toxicity.
Limitations	Prepared as reference safety information for the identified material. It is not a batch analytical certificate or safety assessment of a different solvent-containing formulation.
Revision	2026.2; prepared 2026-10-06. Customer-document branding and title corrected; technical safety data retained.
Document scope	Reference safety information for the material and grade described in Sections 1 and 3. Different concentrations, solvents or formulations require the applicable safety information. This is not a batch analytical certificate.

Revision: 2026.2 | Revision date: 2026-10-06