

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/19/2024

Reviewed on 07/19/2024

## 1 Identification

- **Product identifier**
- **Trade name:** Dimethyl Disulfide (Methyl Disulfide DMDS)
- **Article number:** D5250
- **CAS Number:**  
624-92-0
- **EC number:**  
210-871-0
- **Index number:**  
016-098-00-3
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Aqua Solutions, Inc.  
6913 Highway 225  
DEER PARK, TX 77536  
USA  
800-256-2586
- **Information department:**  
Technical Coordinator  
Sherman Nelson [shermann@aquasolutions.org](mailto:shermann@aquasolutions.org)
- **Emergency telephone number:**  
Chemtec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Toxicity - Oral 3

H301 Toxic if swallowed.

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08 Health hazard

Specific Target Organ Toxicity - Single Exposure 1 H370 Causes damage to the upper respiratory tract. Route of exposure: Inhalation.



GHS07

Eye Irritation 2A

H319 Causes serious eye irritation.

Sensitization - Skin 1

H317 May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure 3 H336 May cause drowsiness or dizziness.

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**Trade name: Dimethyl Disulfide (Methyl Disulfide DMDS)**

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· **Label elements**

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



· **Signal word** *Danger*

· **Hazard statements**

*Highly flammable liquid and vapor.*

*Toxic if swallowed or if inhaled.*

*Causes serious eye irritation.*

*May cause an allergic skin reaction.*

*Causes damage to the upper respiratory tract. Route of exposure: Inhalation.*

*May cause drowsiness or dizziness.*

· **Precautionary statements**

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*Ground/bond container and receiving equipment.*

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

*Do not breathe dust/fume/gas/mist/vapors/spray.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Use only outdoors or in a well-ventilated area.*

*Contaminated work clothing must not be allowed out of the workplace.*

*Wear protective gloves/protective clothing/eye protection/face protection.*

*If swallowed: Immediately call a poison center/doctor.*

*Specific treatment (see on this label).*

*Rinse mouth.*

*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*IF exposed: Call a POISON CENTER or doctor/physician.*

*Call a poison center/doctor if you feel unwell.*

*If skin irritation or rash occurs: Get medical advice/attention.*

*If eye irritation persists: Get medical advice/attention.*

*Wash contaminated clothing before reuse.*

*In case of fire: Use CO<sub>2</sub>, powder or water spray to extinguish.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Store in a well-ventilated place. Keep cool.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 3

Reactivity = 0

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- **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
CAS: 624-92-0 dimethyl disulphide
- **Identification number(s)**
- **EC number:** 210-871-0
- **Index number:** 016-098-00-3

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing have been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**  
Supply fresh air or oxygen; call for doctor.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Do not induce vomiting; immediately call for medical help.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

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## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
  - PAC-1: 0.01 ppm
  - PAC-2: 50 ppm
  - PAC-3: 250 ppm

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

CAS: 624-92-0 dimethyl disulphide

TLV	Long-term value: 0.5 ppm
	Skin

- **Additional information:** The lists that were valid during the creation were used as basis.

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- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

- **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

## \* 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

**Form:** Liquid

**Color:** Light yellow

- **Odor:** Stench

- **Odor threshold:** Not determined.

- **pH-value:** Not determined.

- **Change in condition**

**Melting point/Melting range:** -85 °C (-121 °F)

**Boiling point/Boiling range:** 109 °C (228.2 °F)

- **Flash point:** 15 °C (59 °F)

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· <b>Flammability (solid, gaseous):</b>	Highly flammable.
· <b>Decomposition temperature:</b>	Not determined.
· <b>Ignition temperature:</b>	Not determined.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 25 °C (77 °F):</b>	38 hPa (28.5 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.046 g/cm <sup>3</sup> (8.72887 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

### · Information on toxicological effects

#### · Acute toxicity:

#### · LD/LC50 values that are relevant for classification:

Oral	LD50	190 mg/kg (ATE)
Inhalative	LC50/4h	5 mg/l (ATE)

#### · Primary irritant effect:

- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.

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- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 3 (Assessment by list): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## \* 14 Transport information

- |                                |                                       |
|--------------------------------|---------------------------------------|
| <b>UN-Number</b>               | UN2381                                |
| <b>DOT, IMDG, IATA</b>         |                                       |
| <b>UN proper shipping name</b> | Dimethyl disulfide                    |
| <b>DOT</b>                     | DIMETHYL DISULPHIDE, MARINE POLLUTANT |
| <b>IMDG</b>                    | DIMETHYL DISULPHIDE                   |
| <b>IATA</b>                    | DIMETHYL DISULPHIDE                   |

- **Transport hazard class(es)**

- **DOT**



- **Class** 3 Flammable liquids

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· <b>Label</b>	3, 6.1
· <b>IMDG</b>	
  	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3/6.1
· <b>IATA</b>	
 	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3 (6.1)
· <b>Packing group</b>	II
· <b>DOT, IMDG, IATA</b>	II
· <b>Environmental hazards:</b>	Environmentally hazardous substance, liquid; Marine Pollutant
· <b>Marine pollutant:</b>	Symbol (fish and tree)
· <b>Special precautions for user</b>	Warning: Toxic substances
· <b>Hazard identification number (Kemler code):</b>	63
· <b>EMS Number:</b>	F-E,S-D
· <b>Stowage Category</b>	B
· <b>Stowage Code</b>	SW2 Clear of living quarters.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>DOT</b>	
· <b>Quantity limitations</b>	On passenger aircraft/rail: Forbidden On cargo aircraft only: Forbidden
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	1L
· <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN 2381 DIMETHYL DISULPHIDE, 6.1 (3), II

## \* 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.
- **Sara**
- **Section 355 (extremely hazardous substances):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is not listed.
- **TSCA (Toxic Substances Control Act):** ACTIVE
- **Hazardous Air Pollutants** Substance is not listed.

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- **Proposition 65**
- **Chemicals known to cause cancer:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.
- **Carcinogenic categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



- **Signal word** *Danger*
- **Hazard statements**
  - Highly flammable liquid and vapor.*
  - Toxic if swallowed or if inhaled.*
  - Causes serious eye irritation.*
  - May cause an allergic skin reaction.*
  - Causes damage to the upper respiratory tract. Route of exposure: Inhalation.*
  - May cause drowsiness or dizziness.*
- **Precautionary statements**
  - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*
  - Ground/bond container and receiving equipment.*
  - Use explosion-proof electrical/ventilating/lighting/equipment.*
  - Use only non-sparking tools.*
  - Take precautionary measures against static discharge.*
  - Do not breathe dust/fume/gas/mist/vapors/spray.*
  - Wash thoroughly after handling.*
  - Do not eat, drink or smoke when using this product.*
  - Use only outdoors or in a well-ventilated area.*
  - Contaminated work clothing must not be allowed out of the workplace.*
  - Wear protective gloves/protective clothing/eye protection/face protection.*
  - If swallowed: Immediately call a poison center/doctor.*
  - Specific treatment (see on this label).*
  - Rinse mouth.*
  - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
  - IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
  - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
  - IF exposed: Call a POISON CENTER or doctor/physician.*
  - Call a poison center/doctor if you feel unwell.*
  - If skin irritation or rash occurs: Get medical advice/attention.*
  - If eye irritation persists: Get medical advice/attention.*
  - Wash contaminated clothing before reuse.*
  - In case of fire: Use CO2, powder or water spray to extinguish.*
  - Store in a well-ventilated place. Keep container tightly closed.*
  - Store in a well-ventilated place. Keep cool.*
  - Store locked up.*
  - Dispose of contents/container in accordance with local/regional/national/international regulations.*

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Environment protection department.

· **Contact:**

*Date of Preparation / Last Revision:*

· **Date of preparation / last revision**

*Revision 1.2 07/18/2024: Reviewed SDS for accuracy. MH/STN*

*Creation date for SDS 11-14-2016. STN*

*07/19/2024 / 1.0*

· **Abbreviations and acronyms:**

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety & Health*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

*REL: Recommended Exposure Limit*

*Flammable Liquids 2: Flammable liquids – Category 2*

*Acute Toxicity - Oral 3: Acute toxicity – Category 3*

*Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A*

*Sensitization - Skin 1: Skin sensitisation – Category 1*

*Specific Target Organ Toxicity - Single Exposure 1: Specific target organ toxicity (single exposure) – Category 1*

· **\* Data compared to the previous version altered.**

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