Material Safety Data Sheet

Dimethyl Sulfide (DMS) (RXSOL-19-3070-210)

1. Product and Company Identifaction

Product Name	Dimethyl Sulfide (DMS)
Part Number	RXSOL-19-3070-210

Company Details:
RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

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2. Composition / informationon ingredients

Name of Substance	Cas Number	EC Num
Dimethyl Sulfide	75-18-3	200-846

3. Hazards Identification

Signal Word	Danger
Hazard Statements	H225 Highly flammable liquid and vapor.
Precautionary statements - prevention	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment. P242 Use non-sparking tools. P243 Take action to prevent static discharges.
Precautionary statements response	None
Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

4. First Aid Measures

Skin Contact	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.
Eye Contact	After eye contact: rinse out with plenty of water. Remove contact lenses.

Inhalation:	Move to fresh air. If not breathing, give artificial respiration. Get medical attention ifm symptoms occur. Risk of serious damage to the lungs.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting. Call a physician or Poison Control Center immediately. If vomiting occurs naturally, have victim lean forward.
Most important symptoms/effects	Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Notes to Physician	Treat symptomatically
If swallowed	After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.
Most important symptoms and effects, both acute and delayed	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
Indication of any immediate medical attention and special treatment needed	No data available
Indication of any immediate medical attention and special treatment needed	No data available

5. Fire-fighting Measures

Flammability of the Product	Flammable.
Suitable extinguishing media	Carbon dioxide (CO2) Foam. Dry powder
Unsuitable extinguishing media	For this substance/mixture no limitations of extingui -shing agents are given.
Flash Point	31 °C / 87.8 °F
AutoignitionTemperature	465 °C / 869 °F
Explosion Limits Uper	6.7%
Explosion Limits Lower	0.9%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available
Specific Hazards Arising from the Chemical	Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.
Hazardous Combustion Products	Carbon monoxide (CO) Carbon dioxide (CO2)
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing appar -atus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
Further Information	Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special hazards arising from the substance or mixture	Carbon oxides Sulfur oxides Combustible. Pay attention to flashback. Development of hazardous combustion gases or vapours possible in the event of fire. Forms explosive mixtures with air at ambient temperatures.

6. Accidental Release Measures

Spillage	Absorb with an inert material and put the spilled material in an appropriate waste disposal.Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
Personal Protection	Advice for non-emergency personnel: Do not breathe vapors, aerosols. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Enviromental Precaution	Do not let product enter drains. Risk of explosion.
Methods and materials for containment and cleaning	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.
Reference to other sections	For disposal see section 13.

7. Handling and Storage

Handling	Advice on protection against fire and explosion Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge.
Storage	Storage conditions Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Handle and store under inert gas. Refrigerate before opening. Handle and open container with care. hygroscopic
Hygiene measures	Change contaminated clothing. Wash hands after working with substance. For precautions see section 2.2.
Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. Exposure controls and personal protection

Engineering Control	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Eye/face Protection : Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Skin and body protection : Wear appropriate protective gloves and clothing to prevent skin exposure. Long sleeved clothing.Flame retardant antistatic protective clothing. Respiratory Protection : Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.
Exposure Limits	TWA: 100 (ppm) [Canada] TWA: 435 (mg/m3) [Canada] TWA: 434 STEL: 651 (mg/m3) from ACGIH (TLV) [United States] TWA: 100 STEL: 150 (ppm) from ACGIH (TLV) [United States] Consult local authorities for acceptable exposure limits.
Control of environmental exposure	Do not let product enter drains. Risk of explosion.
Body Protection	Flame retardant antistatic protective clothing.

Respiratory protection	required when vapours/aerosols are generated. Recommended Filter type: Filter type AX The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.



Gloves



Suit

9. Physical and chemical properties

Form	Liquid
Colour	Colourless
Odour	Malodorous, sulfurous
Odor Threshold	No data available
pH	No data available
Melting Point	-98 °C - lit.
Boiling Point	38 °C - lit.
Flash Point	31 °C / 87.8 °F
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Explosive limits	Upper explosion limit: 19,7 %(V) Lower explosion limit: 2,2 %(V)
Vapour pressure	532 hPa at 20 °C
Vapour Density	No data available
Secific Gravity	0.878
Decomposition Temperature	No data available
Partition coefficient	No data available
Autoignition Temperature	220 °C at 999,7 - 1.001 hPa

Solubility in Water	Not Soluble
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 0,7 mPa.s at 20 °C - OECD Test Guideline 1140,51 mPa.s at 40 °C - OECD Test Guideline 114
Molecular Formula	C8 H10
Molecular Weight	106.17
Other safety information	Solubility in other solvents Ether at 20 °C - soluble Ethanol at 20 °C - soluble

10. Stability and reactivity

Recativity Hazard	Vapors may form explosive mixture with air
Stability	The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	Risk of explosion with: Peroxides Dioxane with Nitric acid Risk of ignition or formation of inflammable gases or vapours with: Oxidizing agents Oxygen
Conditions to avoid	Warming.
Incompatible materials	various plastics
Hazardous Decomposition Products	In the event of fire: see section 5
Hazardous Polymerization	Hazardous polymerization does not occur. Hazardous Reactions None under normal processing

11. Toxicological information

Acute oral toxicity	LD0 Oral - Rat - female - > 2.000 mg/kg (OECD Test Guideline 423) Remarks: Limit Test LC50 Inhalation - Rat - male and female - 4 h - 102 mg/l (OECD Test Guideline 403) Remarks: Lungs, Thorax, or Respiration:Other changes. LD0 Dermal - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 402) Remarks: Limit Test
Acute dermal toxic	Acute toxicity estimate : 1,134 mg/kg

Skin corrosion	No data available
Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation. Can be absorbed through skin. Eyes: Causes eye irritation. Inhalation: Vapor causes respiratory tract and mucous membrane irritation.
Special Remarks on Chronic Effects on Humans	Detected in maternal milk in human. Passes through the placental barrier in animal. Embryotoxic and/or foetotoxic in animal. May cause adverse reproductive effects (male and femael fertility (spontaneous abortion and fetotoxicity) and birth defects based animal data.
Further information After absorption:	Headache, somnolence, Dizziness, euphoria, agitation, spasms, narcosis Effect potentiated by: ethanol Damage to: Kidney, Central nervous system, Liver
Germ cell mutagenicity	No data available Test Type: In vitro mammalian cell gene mutation test Test system: Mouse lymphoma test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Micronucleus test Species: Mouse Cell type: Bone marrow Application Route: Oral Method: OECD Test Guideline 474 Result: negative
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	Repeated dose toxicity - Rat - male and female - Oral - 14 Weeks - NOAEL (No observed adverse effect level) - >= 250 mg/kg Remarks: Subchronic toxicity RTECS: PV5075000 Nausea, Headache, Vomiting To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Systemic effects: After absorption of large quantities: CNS disorders somnolence Dizziness agitation, spasms narcosis Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

12. Ecological information

Toxicity to Fish	Toxicity to fish semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 213 mg/l - 96 h (OECD Test Guideline 203) Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 29 mg/l - 48 h (OECD Test Guideline 202) Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 113,7 mg/l - 72 h (OECD Test Guideline 201)
Persistence and degradability	Biodegradability aerobic - Exposure time 28 d Result: 77 % - Readily biodegradable. (OECD Test Guideline 301D)
COD and BOD 5	Not Available
Products of Biodegradation:	No information available.
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent,bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Other adverse effects	No data available

13. Disposal considerations

Waste treatment Method	See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

14. Transport information

UN Number	: ADR/RID: 1164	:IMDG: 1164
Proper shipping name		
ADR/RID	: DIMETHYL SULPHIDE	
IMDG	: DIMETHYL SULPHIDE	
IATA	: Dimethyl sulphide	
Transport hazard class(es)	: ADR/RID: 3	IMDG: 3
Packaging group	: ADR/RID: II	IMDG: II
Environmental hazards	: ADR/RID: No	IMDG Marine P
Special precautions for user	: No data available	

15. Regulatory information

Fedral and State Regulation	This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
Other Regulation	Take note of Dir 94/33/EC on the protection of young people at work
WHMIS (Canada)	CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
DSCL (EEC)	R11- Highly flammable. R38- Irritating to skin. R41- Risk of serious damage to eyes.
Safety, health and environmental regulations/legislation specific for the substance or mixture	This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
National legislation	Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : FLAMMABLE LIQUIDS : FLAMMABLE LIQUIDS

16. Other information

	The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Rx Marine International has been advised of the possibility of such damages.
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