Material Safety Data Sheet

Dimethyl Sulfoxide DMSO (RXSOL-60-6224-100)

1. Product and Company Identifaction

Product Name	Dimethyl sulfoxide DMSO
Part Number	RXSOL-60-6224-100

Company Details:
RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA
Branch : Kandla , Hazira, Mumbai, Chennai, Vizag, Kolkata, UAE & OMAN

Phone	+91 22 2781 5540 / 41 /42
Fax	+91 22 2781 1318 :::AOH :0091 9821214367
Email	123@rxmarine.com
Website	www.rxmarine.com

2. Composition / informationon ingredients

Name of Substance	Cas Number	EC Num
Dimethyl Sulfoxide (DMSO)	67-68-5	200-664

3. Hazards Identification

Signal Word	Warning
Hazard Statements	Combustible liquid
Precautionary statements - prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking **Fire :** In case of fire: Use CO2, dry chemical, or foam for extinction **Storage :** Store in a well-ventilated place. Keep cool **Disposal :** Dispose of contents/container to an approved waste disposal plant Hazards not otherwise classified (HNOC) : None identified
Other hazards	DMSO readily penetrates skin and may carry other dissolved chemicals into the body.

4. First Aid Measures

Skin Contact	Take off immediately all contaminated clothing. Rinse skin with water/ shower.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
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	Irritant effects, Headache, Nausea, Tiredness, CNS disorders
Notes to Physician	Indication of any immediate medical attention and special treatment needed Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

5. Fire-fighting Measures

Suitable extinguishing media	Foam, Carbon dioxide (CO2), Dry powder, Water
Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given.
Flash Point	87 °C / 181.6 °F
AutoignitionTemperature	301 °C / 573.8 °F
Explosion Limits Uper	42 Vol %
Explosion Limits Lower	2.6 Vol %
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available
Specific Hazards Arising from the Chemical	Combustible material. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors
Hazardous Combustion Products	Carbon monoxide (CO) Carbon dioxide (CO2) Sulfur oxides Sulfides Formaldehyde
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
Further Information	Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental Release Measures

Spillage	Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Personal Protection	Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Ensure adequate ventilation.
Enviromental Precaution	Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.
Methods and materials for containment and cleaning	Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal

7. Handling and Storage

Handling	Wear personal protective equipment. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition
Hygiene measures	Change contaminated clothing. Wash hands after working with substance.

8. Exposure controls and personal protection

Engineering Control	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation 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	This product does not contain any hazardous materials with occupational exposure limitsestablished by the region specific regulatory bodies.



Gloves



Suit

9. Physical and chemical properties

Form	Liquid
Colour	Colourless

Odour	Odourless
Odor Threshold	No Information Available
pH	Not Applicable
Melting Point	18.4 °C / 65.1 °F
Boiling Point	189 °C / 372.2 °F
Flash Point	87 °C / 188.6 °F
Evaporation Rate	No information available
Flammability (solid, gas)	Not Applicable
Explosive limits	Upper 42 vol % Lower 2.6 vol %
Vapour pressure	0.55 mbar @ 20°C
Vapour Density	2.7
Secific Gravity	1.100
Solubility	Soluble in water
Partition coefficient n-octanol/water	No data available
Autoignition Temperature	301 °C / 573.8 °F
Decomposition Temperature	> 190°C
Viscosity	1.98 mPa.s @ 25°C
Molecular Formula	C2 H6 O S
Molecular Weight	78.13

10. Stability and reactivity

Recativity Hazard	None known, based on information available
Stability	Hygroscopic.
Possibility of hazardous reactions	No known hazardous reactions.
Conditions to avoid	Incompatible products. Excess heat. Exposure to moist air or water. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible materials	Strong oxidizing agents, Strong acids, Strong reducing agents,Alkali metals
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO2), Sulfur oxides, Sulfides, Formaldehyde
Hazardous Polymerization	Hazardous polymerization does not occur. Hazardous Reactions Hazardous polymerization does not occur. Hazardous Reactions Thermal decomposition can take place above 189°C / 372°F.

11. Toxicological information

Acute oral toxicity	LD50 Rat: 28,300 mg/kg OECD Test Guideline 401
Acute inhalation toxicity	LC0 Rat: > 5.33 mg/l; 4 h ; dust/mist OECD Test Guideline 403
Acute dermal toxic	LD50 Rat: 40,000 mg/kg
Skin corrosion	Rabbit Result: slight irritation OECD Test Guideline 404 Possible damages: slight irritation
Eye corrosion	Rabbit Result: slight irritation OECD Test Guideline 405 Possible damages: slight irritation

Sensitisation	Maximisation Test Guinea pig Result: negative Method: OECD Test Guideline 406
In animal experiments	Mouse Result: negative Method: OECD Test Guideline 429
No indication of carcinogenic activity. (IUCLID)	Reproductive toxicity This information is not available. Teratogenicity Did not show teratogenic effects in animal experiments. Specific target organ toxicity - single exposure This information is not available. Specific target organ toxicity - repeated exposure This information is not available. Aspiration hazard This information is not available.
Further information	Possible symptoms: After uptake: CNS disorders, Nausea, Tiredness, Headache Damage to: Liver, Kidney However, when the product is handled appropriately, hazardous effects are unlikely to occur. Handle in accordance with good industrial hygiene and safety practice.

12. Ecological information

Toxicity	**Toxicity to fish** static test LC50 Danio rerio (zebra fish): > 25,000 mg/l; 96 h OECD Test Guideline 203 Toxicity to daphnia and other aquatic invertebrates static test EC50 Daphnia magna (Water flea): 24,600 mg/l; 48 h Analytical monitoring: yes OECD Test Guideline 202 **Toxicity to algae** static test EC50 Pseudokirchneriella subcapitata (green algae): 17,000 mg/l; 72 h Analytical monitoring: yes OECD Test Guideline 201 **Toxicity to bacteria** EC10 Pseudomonas putida: 7,100 mg/l; 16 h (IUCLID) EC50 activated sludge: 10 - 100 mg/l; 30 min (IUCLID)
Persistence and degradability	Biodegradability 31 %; 28 d; aerobic OECD Test Guideline 301D Not readily biodegradable.
Bioaccumulative potential	Partition coefficient: n-octanol/water log Pow: -1.35 (experimental) (Lit.) Bioaccumulation is not expected.
Mobility in soil	No information available.
Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Other adverse effects	Discharge into the environment must be avoided.

13. Disposal considerations

Waste treatment Method	Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

14. Transport information

Transport in

Land transport (ADR/RID)	Not classified as dangerous in the meaning of transport regulations.
Inland waterway transport (ADN)	Not relevant
Air transport (IATA)	Not classified as dangerous in the meaning of transport regulations.
Sea transport (IMDG)	Not classified as dangerous in the meaning of transport regulations.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not relevant

15. Regulatory information

Regulatory Information	Safety, health and environmental regulations/legislation specific for the substance or mixture National legislation Storage class 10 - 13
Chemical safety assessment	For this product a chemical safety assessment was not carried out.

16. Other information

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.