Material Safety Data Sheet

CO2 absorber (RXSOL-81-8197-220)

1. Product and Company Identifaction

Product Name	RXSOL-81-8197-220
Product Type	CO2 absorber

Company Details:

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

Stock Point : Kolkata, Mumbai, Chennai, Visakhapatnam, Gandhidham, Fujairah, Muscat, Nairobi

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2. Composition / informationon ingredients

Chemica Name	CAS Number	%
2-(2-Aminoethoxy)ethanol	929-06-6	40-50
Proprietary Blend of CO2 Absorbents	-	50-60

3. Hazards Identification

Physical state	Liquid.
Odor	Amine-like.
OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	DANGER! CAUSES EYE AND SKIN BURNS. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. Corrosive to eyes and skin. Causes burns. Do not breathe vapor or mist. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling. Aspiration hazard if swallowed. Can enter lungs and cause damage.
GENERAL INFORMATION	Read the entire MSDS for a more thorough evaluation of the hazards.

4. First Aid Measures

Eye contact	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
Skin contact	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Inhalation	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Inhalation	Get medical attention immediately. Wash out mouth with water. Move exposed person to fresh air. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person.
Notes to physician	Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours

5. Fire-fighting Measures

Flash point	Closed cup: 127°C (260.6°F)
Flammable limits	Lower: 2.6%
	Upper: 11.7%
Products of combustion	Decomposition products may include the following materials:
	carbon dioxide
	carbon monoxide
	nitrogen oxides
Extinguishing media	
Suitable	Use an extinguishing agent suitable for the surrounding fire.
Not suitable	None known.
Special exposure hazards	In a fire or if heated, a pressure increase will occur and the container may burst. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental Release Measures

Personal precautions	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods for cleaning up	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and Storage

Handling	Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.
Storage	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls and personal protection

Preventive Measures	Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.
Engineering controls	Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to publications such as the ACGIH current edition of 'Industrial Ventilation, a manual of Recommended Practice.'
Personal protection	
Eyes	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on nown or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hands	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

9. Physical and chemical properties

General information	

Appearance	
Physical state	Liquid.
Color	Clear.
Odor	Amine-like.
Odor threshold	Not available.
Important health, safety and environmental information	
pH	11.8
Boiling point	222.5 to 223.8°C (432.5 to 434.8°F)
Melting point	-12.5°C (9.5°F)
Flash point	Closed cup: 127°C (260.6°F)
Oxidizing properties	None
Vapor pressure	0.1 kPa (0.75 mm Hg) [20°C]
Relative density	1.06 (Specific gravity)
Partition coefficient: noctanol/ water (log Kow)	-1.89
Viscosity	Kinematic: 0.075 cm2/s (7.5cSt at 51.7°C)
Vapor density	3.6 [Air = 1]
Auto-ignition temperature	370°C (698°F)
VOC content	99%

10. Stability and reactivity

Stability and reactivity	The product is stable.
Incompatibility with various substances	Extremely reactive or incompatible with the following materials: acids. Reactive or incompatible with the following materials: metals. carbon monoxide, carbon dioxide, Nitrogen oxides
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur .
Hazardous decomposition products	Decomposition products may include the following materials: carbon dioxide Not available. carbon monoxide nitrogen oxides

11. Toxicological information

Toxicity data

Acute toxicity

Product/ingredient name	Test	Species	Result	Exposure
2-(2-Aminoethoxy)ethanol	LD50 Dermal	Rabbit - Male, Female	>3000 mg/kg	
	LD50 Oral	Rat - Male, Female	3400 mg/kg	
	LC50 Inhalation Vapor	Rat - Male,Female	>8.7 mg/m3	8 hours

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
2-(2-Aminoethoxy)ethanol	skin	Guinea pig	Not sensitizing

Chronic toxicity

Product/ingredient name	Test	Species	Result	Exposure
2-(2-Aminoethoxy)ethanol	Sub-acute NOAEL Dermal	Rat - Male, Female	>1500 mg/kg/d	14 days; 6 hours per day

Mutagenicity	Test	Experiment	Result
2-(2-Aminoethoxy)ethanol	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic	Negative
	EPA OPPTS	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian-Animal	Negative

Potential acute health effects

Ingestion	Aspiration hazard if swallowed. Can enter lungs and cause damage. May cause burns to mouth, throat and stomach.
Inhalation	May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system
Eyes	Corrosive to eyes. Causes burns.
Skin	Corrosive to the skin. Causes burns.
Potential chronic health effects	
Chronic effects	No known significant effects or critical hazards.
Target organs	None known.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.

Teratogenicity	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.

12. Ecological information

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
2-(2-Aminoethoxy)ethanol		Acute EC50 190 mg/L	Daphnia	48 hours
		Acute IC50 160 mg/L	Algae	72 hours
		Acute LC50 460 mg/L	Fish	96 hours

Biodegradability

Product/ingredient name	Test	Result	Dose	Inoculum
2-(2-Aminoethoxy)ethanol	OECD	1 % - Not readily - 28 days	3 mg/L	Marine water

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2-(2-Aminoethoxy)ethanol			**Not readily**

Product/ingredient name	LogPow	BCF	Potential
2-(2-Aminoethoxy)ethanol	1.2		low

Environmental effects	Not readily biodegradable. This product shows a low bioaccumulation potential.

13. Disposal considerations

Waste disposal	The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	UN3055	2-(2-Aminoethoxy)ethanol	8	III		
TDG Classification	UN3055	2-(2-Aminoethoxy)ethanol	8	III		
IMDG Class	UN3055	2-(2-Aminoethoxy)ethanol	8	III		Emergency schedules (EmS) F-A, S-B
IATA-DGR Class	UN3055	2-(2-Aminoethoxy)ethanol	8	III		Passenger and Cargo AircraftQuantity limitation: 5 L Packaging instructions: 818 Cargo Aircraft Only Quantity limitation: 60 L Packaging instructions: 820

The transport regulations may change in the different countries. Check for the appropriate regulations in the countryof transport or usage of this product.

15. Regulatory information

United States	
HCS Classification	Corrosive material
U.S. Federal regulations	United States inventory (TSCA 8b): This material is listed or exempted.
CERCLA: Hazardous substances	No ingredients listed.
SARA 313	No ingredients listed.
	This product does not contain nor is it manufactured with ozone depleting substances.
California Prop 65	This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.
Canada	
WHMIS (Canada)	Class E: Corrosive material
CEPA (DSL)	This material is listed or exempted.

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS (Material Safety Data Sheet) contains all the information required by the CPR.

16. Other information

Label requirements	CAUSES EYE AND SKIN BURNS. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE.
Hazardous Material Information System (U.S.A.)	Health 3
	Fire hazard 1
	Reactivity 0
National Fire Protection Association (U.S.A.)	Health 3

Flammability 1

Instability 0

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