Material Safety Data Sheet

Sodium Perchlorate Solution (RXSOL-60-6194-500)

1. Product and Company Identifaction

Product Name	RXSOL-60-6194-500
Product Type	Sodium Perchlorate Solution

Company Details:

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

Phone	+91 22 65113333 / 5555 / 9999
Fax	+91 22 2781 1318 :::AOH :0091 9821214367
Email	mail@rxmarine.com

2. Composition / informationon ingredients

Mixture

Name	CAS No	% (w/w)	GHS-US classification
Perchloric acid, sodium salt, monohydrate (Sodium Perchlorate Monohydrate)	CAS No.7601-89-0	69.044	Ox. Sol. 1, H271
Water	CAS No. 7732-18-5	30.956	Not classified

3. Hazards Identification

Classification Of The Substance Or Mixture

GHS-US classification
Ox. Liq. 1 H271

Label Elements

GHS-US labeling

Hazard pictograms (GHS-US) : GHS03

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H271 - May cause fire or explosion; strong oxidizer

Precautionary statements (GHS-US) :

P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking

P220 - Keep/Store away from combustible materials, incompatibilities

P280 - Wear gloves, protective clothing, eye protection, respiratory protection

P283 - Wear fire/flame resistant/retardant clothing

P306+P360 - If on clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes

P370+P378 - In case of fire: Use water spray or foam for extinction

P371+P380+P375 - In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion

P501 - Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Other hazards not contributing to the classification: Risk of explosion by shock, friction, fire or other sources of ignition. May cause the blood disorder Methemoglobinemia. With over exposure in pre disposed individuals may cause: renal problems, cardiac abnormalities, other blood disorders.

Unknown acute toxicity (GHS US) Not available

4. First Aid Measures

Description Of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation persists.

Eye Contact: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

Most Important Symptoms And Effects Both Acute and Delayed

General: Not available

Inhalation: Overexposure may be irritating to the respiratory system. May be toxic if inhaled at high concentrations.

Skin Contact: Causes mild skin irritation.

Eye Contact: May cause eye irritation.

Ingestion: Abdominal pain, nausea, vomiting, diarrhea. May be harmful if ingested in large quantities.

Chronic symptoms: May cause the blood disorder Methemoglobinemia. With over exposure in pre disposed individuals may cause: renal problems, cardiac abnormalities, other blood disorders.

Indication Of Any Immediate Medical Attention And Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

5. Fire-fighting Measures

Extinguishing Media

Suitable extinguishing media: Foam, dry chemical powder. Water spray. Carbon dioxide. Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media: Do not use a heavy water stream.

Special Hazards Arising From The Substance Or Mixture

Fire hazard: May cause fire or explosion; strong oxidizer.

Explosion hazard: Heating may cause an explosion. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity: Not available

Advice For Firefighters

Precautionary measures fire: Not available

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Toxic fumes are released. Hydrogen chloride. Sodium oxides.

Reference To Other Sections

Refer to section 9 for flammability properties.

6. Accidental Release Measures

Personal Precautions, Protective Equipment And Emergency Procedures

General measures: No naked lights. No smoking. Use special care to avoid static electric charges.

For Non-Emergency Personnel

Protective equipment: Use appropriate personal protection equipment (PPE).

Emergency procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods And Material For Containment And Cleaning Up

For containment : Absorb and/or contain spill with inert material, then place in suitable container. Do not take up in combustible material such as: saw dust or cellulosic material. Ventilate area.

Methods for cleaning up: Clear up spills immediately and dispose of waste safely. Cover with dry sand/earth dry powdered limestone or soda ash.

Reference To Other Sections

See Heading 8, exposure controls and personal protection

7. Handling and Storage

Precautions For Safe Handling

Additional hazards when processed: Hazardous waste due to potential risk of explosion.

Hygiene measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions For Safe Storage, Including Any Incompatibilities

Technical measures: Proper grounding procedures to avoid static electricity should be followed.

Storage conditions: Keep only in the original container in a cool, well ventilated place away from: combustible materials, incombatibilities. Keep container closed when not in use. Keep away from heat and direct sunlight. Store in original container. Keep in fireproof place.

Storage area: Store in a well-ventilated place.

Specific End Use(s) Laboratory reagent

8. Exposure controls and personal protection

Control Parameters

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

Exposure Controls

Appropriate engineering controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits indicated below. All electrical equipment should comply with the National Electric Code. Proper grounding procedures to avoid static electricity should be followed..

Personal protective equipment: Avoid all unnecessary exposure. Gloves, protective goggles, insufficient ventilation: wear respiratory protection, protective clothing.

Materials for protective clothing: Anti-static clothing in natural material or heat resistant synthetic material. Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Hand protection: Wear chemically resistant protective gloves.

Eye protection: Chemical goggles or safety glasses.

Skin and body protection: Not available

Respiratory protection: Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of vapor or mist are expected to exceed exposure limits.

Environmental exposure controls: Do not release to the environment.

Other information: When using, do not eat, drink or smoke.

9. Physical and chemical properties

Information On Basic Physical And Chemical Properties

Physical state	Liquid
Appearance	Clear
Odour	Odorless
Odour threshold	Not available
pH	Not available
Relative evaporation rate (butylacetate=1)	Not available
Melting point	Not available
Freezing point	Not available
Boiling point	Not available
Flash point	Not available
Auto-ignition temperature	Not available
Decomposition Temperature	Not available
Flammability (solid, gas)	Not available
Lower flammable limit	Not available
Upper flammable limit	Not available
Vapour pressure	Not available
Relative vapor density at 20 °C	Not available
Relative density	Not available
Specific gravity density	Not available
Solubility	Water: soluble
Log Pow	Not available
Log Kow	Not available

Viscosity, kinematic	Not available
Viscosity, dynamic	Not available
Explosion data - sensitivity to mechanical impact	Friction may cause explosion.
Explosion data - sensitivity to static discharge	Shock may cause explosion.

10. Stability and reactivity

Reactivity Not available

Chemical Stability May cause fire or explosion; strong oxidizer.

Possibility Of Hazardous Reactions Hazardous polymerization will not occur.

Conditions To Avoid Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Overheating. Open flame. Incompatible materials. May explode from heat, shock, friction or contamination.

Incompatible Materials Strong acids. Strong bases. Avoid ignition sources. May react violently with combustible materials. May react violently with finely divided metals. Strong oxidizers. Reducing agents.

Hazardous Decomposition Products Toxic gases. Fumes. Hydrogen chloride. Sodium oxides.

11. Toxicological information

Information On Toxicological Effects - Product

Acute toxicity : Not classified

LD50 and LC50 Data Not available

Skin corrosion/irritation: Not classified

Serious eye damage/irritation: Not classified

Respiratory or skin sensitisation: Not classified

Germ cell mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: Not classified

Specific target organ toxicity (repeated exposure): Not classified

Reproductive toxicity: Not classified

Specific target organ toxicity (single exposure): Not classified

Aspiration hazard: Not classified

Symptoms/injuries after inhalation: Overexposure may be irritating to the respiratory system. May be toxic if inhaled at high concentrations.

Symptoms/injuries after skin contact: Causes mild skin irritation.

Symptoms/injuries after eye contact: May cause eye irritation.

Symptoms/injuries after ingestion: Abdominal pain. Nausea. Vomiting. Diarrhea. May be harmful if ingested in large quantities.

Chronic symptoms: May cause the blood disorder Methemoglobinemia. With over exposure in pre disposed individuals may cause: renal problems, cardiac abnormalities, other blood disorders.

Information On Toxicological Effects - Ingredient(s)

LD50 and LC50 Data Not available

12. Ecological information

Toxicity

Persistence And Degradability

Sodium Perchlorate Solution

Persistence and degradability	Not established.

Bioaccumulative Potential

Sodium Perchlorate Solution

Bioaccumulative potential	Not established.

Mobility In Soil Not available

Other Adverse Effects

Other information: Avoid release to the environment.

13. Disposal considerations

Waste treatment methods: Hazardous waste due to potential risk of explosion.

Waste disposal recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

Ecology - waste materials: Avoid release to the environment.

14. Transport information

In accordance with ICAO/IATA/DOT/TDG

UN Number

UN-No.(DOT): 3139
DOT NA no.: UN3139

UN Proper Shipping Name

DOT Proper Shipping Name : Oxidizing liquid n.o.s. (Sodium Perchlorate)

Department of Transportation (DOT) Hazard Classes : 5.1 - Class 5.1 - Oxidizer 49 CFR 173.128

Hazard labels (DOT): 5.1 - Oxidizer

DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : II - Medium Danger

DOT Special Provisions (49 CFR 172.102) : 127 - Mixtures containing oxidizing and organic materials transported under this entry may not meet the definition and criteria of a Class 1 material. (See 173.50 of this subchapter.) 128Regardless of the provisions of 172.101(c)(12), aluminum smelting by-products and aluminum remelting by-products described under this entry, meeting the definition of Class 8, Packing Group II and III may be classed as a Division 4.3 material and transported under this entry. The presence of a Class 8 hazard must be communicated as required by this Part for subsidiary hazards. A2 - Single packagings are not permitted on aircraft. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.

DOT Packaging Exceptions (49 CFR 173.xxx) : 152

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 242

Additional information
Emergency Response Guide (ERG) Number : 140

Overland transport Oxidizing liquid n.o.s. (Sodium Perchlorate)

Transport by sea

DOT Vessel Stowage Location:
B - (i) The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) ‘‘On deck only’’ on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other :
56 - Stow ‘‘separated from’’ ammonium compounds,58 - Stow ‘‘separated from’’ cyanides,106 - Stow ‘‘separated from’’ powdered metal

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 5 L

15. Regulatory information

US Federal regulations

Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

US State regulations -

This product or its ingredients are not included on any State regulatory lists.

Canadian regulations

Sodium Perchlorate Solution

WHMIS Classification	Class C - Oxidizing Material

Water (7732-18-5)

Listed on the Canadian DSL (Domestic Sustances List) inventory.

WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

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

16. Other information

Indication of changes : Revision date: 05/14/2013

Other information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases :

Ox. Liq. 1	Oxidising liquids Category 1
Ox. Sol. 1	Oxidising solids Category 1
H271	May cause fire or explosion; strong oxidizer

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity :2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.

NFPA specific hazard : OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.

HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability: 1 Slight Hazard

Physical : 3 Serious Hazard

Party Responsible For The Preparation Of This Document:
OFI Testing Equipment

Phone Number: 832-320-7300

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.