Material Safety Data Sheet

Potassium Diethyldithiocarbamate Cooling Water Treatment (RXSOL-43-4008-020)

1. Product and Company Identifaction

Product Name	BIOCIDE
Product Type	RXSOL-40-4008-020

Company Details:

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

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

Phone	+91 22 27815541 / 42
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Email	mail@rxmarine.com

2. Composition / informationon ingredients

Ingredient	CAS No	Percent
Hydrogen peroxide	7722-84-1	27
Water	7732-18-5	10
Proprietroy Blend	NA	63

3. Hazards Identification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Acute toxicity - Oral Category 4

Serious eye damage/eye irritation Category 1

Oxidizing Liquids Category 2

GHS Label elements, including precautionary statements

Danger Hazard Statements

H318 - Causes serious eye damage

H302 - Harmful if swallowed

H272 - May intensify fire; oxidizer

Precautionary Statements - Prevention

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

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

P220 - Keep/Store away from clothing/flammable materials/combustibles

P221 - Take any precaution to avoid mixing with combustibles/flammables Precautionary Statements - Response

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell P330 - Rinse mouth

P370 + P378 - In case of fire: Use water for extinction Hazards not otherwise classified (HNOC) No hazards not otherwise classified were identified.

Other Information

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical attention if symptoms occur.

IF ON SKIN OR CLOTHING: Wash with plenty of water. Take off contaminated clothing and wash before reuse.

If skin irritation occurs: Get medical advice/attention. Keep container in a cool place out of direct sunlight. Store only in vented containers. Do not store on wooden pallets. Do not return unused material to its original container.

Avoid contamination - Contamination could cause decomposition and generation of oxygen which may result in high pressure and possible container rupture. Empty drums should be triple rinsed with water before discarding. .

4. First Aid Measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Seek immediate medical attention/advice.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
Inhalation	Move to fresh air. If person is not breathing, contact emergency medical services, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Ingestion	Rinse mouth. Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	Hydrogen Peroxide irritates respiratory system and, if inhaled, may cause inflammation and pulmonary edema. The effects may not be immediate. Overexposure symptoms are coughing, giddiness and sore throat. In case of accidental ingestion, necrosis may result from mucous membrane burns (mouth, esophagus and stomach). Oxygen rapid release may cause stomach swelling and hemorrhaging, which may product major, or even fatal, injury to organs if a large amount has been ingested. In case of skin contact, may cause burns, erythema, blisters or even necrosis.
Indication of immediate medical attention and special treatment needed, if necessary	Hydrogen peroxide at these concentrations is a strong oxidant. Direct contact with the eye is likely to cause corneal damage especially if not washed immediately. Careful opthalmologic evaluation is recommended and the possibility of local corticosteroid therapy should be considered. Because of the likelihood of corrosive effects on the gastrointestinal tract after ingestion, and the unlikelihood of systemic effects, attemps at evacuating the stomach via emesis induction or gastric lavage should be avoided. There is a remote possibility, however, that a nasogastric or orogastric tube may be required for the reduction of severe distension due to gas formation

5. Fire-fighting Measures

Suitable Extinguishing Media Water. Do not use any other substance.

Specific Hazards Arising from the Chemical In closed unventilated containers, risk of rupture due to the increased pressure from decomposition. Contact with combustible material may cause fire

Hazardous Combustion Products On decomposition product releases oxygen which may intensify fire.

Explosion data

Sensitivity to Mechanical Impact Not sensitive.

Sensitivity to Static Discharge Not sensitive.

Protective equipment and precautions for firefighters Use water spray to cool fire exposed surfaces and protect personnel. Move containers from fire area if you can do it without risk. As in any fire, wear self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

Personal Precautions Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Isolate and post spill area. Keep people away from and upwind of spill/leak. Eliminate all sources of ignition and remove combustible materials. Other Combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large amounts of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in fire. Environmental Precautions Prevent material from entering into soil, ditches, sewers, waterways, and/or groundwater. See Section 12, Ecological Information for more detailed information. Methods for Containment Dike to collect large liquid spills. Stop leak and contain spill if this can be done safely. Small

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Environmental Precautions	Shut off source of leak if safe to do so - Use appropriate containment to avoid environmental contamination
Special Precautions	Prevent material from entering into soil, ditches, sewers, waterways, and/or groundwater. See Section 12, Ecological Information for more detailed information
Methods for Containment	Dike to collect large liquid spills. Stop leak and contain spill if this can be done safely. Small
Methods for cleaning up	Flush area with flooding quantities of water. Hydrogen peroxide may be decomposed by adding sodium metabisulfite or sodium sulfite after diluting to about 5%.

7. Handling and Storage

Handling	Wear protective clothing.Avoid contact with skin and eyes. Eyewash bottles should be available Storage Keep only in the original container in a cool, well ventilated place.Keep/Store away from clothing/ combustible materials. Wear personal protective equipment. Reference to other sections. Never return unused hydrogen peroxide to original container. Contamination may cause decomposition and generation of oxygen gas which could result in high pressures and possible container rupture. Empty drums should be triple rinsed with water before discarding. Utensils used for handling hydrogen peroxide should only be made of glass, stainless steel, aluminum or plastic. Pipes and equipment should be passivated before first use. Use only in well-ventilated areas. Hydrogen peroxide should be stored only in vented containers and transferred only in a prescribed manner.
Storage	Keep containers in cool areas out of direct sunlight and away from combustibles. Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment. Containers must be vented. Keep/store only in original container. Store rooms or warehouses should be made of non-combustible materials with impermeable floors. In case of release, spillage should flow to safe area. Containers should be visually inspected on a regular basis to detect any abnormalities (swollen drums, increases in temperature, etc.).
Incompatible products	Combustible materials. Copper alloys, galvanized iron. Strong reducing agents. Heavy metals. Iron. Copper alloys. Contact with metals, metallic ions, alkalis, reducing agents and organic matter (such as alcohols or terpenes) may produce self-accelerated thermal decomposition.

8. Exposure controls and personal protection

Exposure Guidelines Ingredients with workplace control parameters

Appropriate engineering controls

Engineering measures Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Use chemical splash-type monogoggles and a full-face shield made of polycarbonate, acetate, polycarbonate/acetate, PETG or thermoplastic.

Skin and Body Protection For body protection wear impervious clothing such as an approved splash protective suit made of SBR rubber, PVC (PVC Outershell w/Polyester Substrate), Gore-Tex (Polyester trilaminate w/Gore-Tex), or a specialized HAZMAT Splash or Protective Suite (Level A, B, or C). For foot protection, wear approved boots made of NBR, PVC, Polyurethane, or neoprene. Overboots made of Latex or PVC, as well as firefighter boots or specialized HAZMAT boots are also permitted. DO NOT wear any form of boot or overboot made of nylon or nylon blends. DO NOT USE cotton, wool or leather as these materials react rapidly with higher concentrations of hydrogen peroxide. Completely submerge hydrogen peroxidecontaminated clothing or other materials in water prior to drying. Residual hydrogen peroxide, if allowed to dry on materials such as paper, fabrics, cotton, leather, wood or other combustibles, can cause the material to ignite and result in a fire.

Hand Protection For hand protection, wear approved gloves made of nitrile, PVC, or neoprene. DO NOT use cotton, wool or leather for these materials react RAPIDLY with higher concentrations of hydrogen peroxide. Thoroughly rinse the outside of gloves with water prior to removal. Inspect regularly for leaks.

Respiratory Protection If concentrations in excess of 10 ppm are expected, use NIOSH/DHHS approved self-contained breathing apparatus (SCBA) or other approved air-supplied respirator (ASR) equipment (e.g., a full-face airline respirator (ALR)). DO NOT use any form of air-purifying respirator (APR) or filtering facepiece (dust mask), especially those containing oxidizable sorbants such as activated carbon.

Hygiene measures Avoid breathing vapors, mist or gas. Clean water should be available for washing in case of eye or skin contamination.

General information Protective engineering solutions should be implemented and in use before personal protective equipment is considered.

9. Physical and chemical properties

Appearance Clear, colorless liquid

Physical State Liquid

Color Colorless Odor odorless

Odor threshold Not applicable

pH = 3.7

Melting point/freezing point -22 °C

Boiling Point/Range 105 °C

Flash point Not flammable

Evaporation Rate No information available

Flammability (solid, gas) Not flammable

Flammability Limit in Air Not applicable

Upper flammability limit:

Lower flammability limit:

Vapor pressure 26 mm Hg @ 30 °C

Vapor density No information available

Density 1.10 g/cm³ @ 20ºC

Specific gravity 1.10

Water solubility completely soluble

Solubility in other solvents No information available

Partition coefficient log Kow = -1.5 @ 20 °C

Autoignition temperature Not combustible

Decomposition temperature 100 °C

Viscosity, kinematic 1.06 cP @ 20 °C

Viscosity, dynamic No information available

Explosive properties No information available

Oxidizing properties Strong oxidizer

Molecular weight 34

Bulk density Not applicable

10. Stability and reactivity

Reactivity

Chemical Stability Stable under normal conditions. Decomposes on heating. Stable under recommended storage conditions.

Possibility of Hazardous Reactions Contact with organic substances may cause fire or explosion. Contact with metals, metallic

ions, alkalis, reducing agents and organic matter (such as alcohols or terpenes) may produce self-accelerated thermal decomposition.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Excessive heat; Contamination; Exposure to UV-rays; pH variations.

Incompatible materials Combustible materials. Copper alloys, galvanized iron. Strong reducing agents. Heavy metals. Iron. Copper alloys. Contact with metals, metallic ions, alkalis, reducing agents and organic matter (such as alcohols or terpenes) may produce self-accelerated thermal decomposition.

Hazardous Decomposition Products Oxygen which supports combustion. Liable to produce overpressure in container

11. Toxicological information

Product Information

LD50 Oral 50% solution: LD50 > 225 mg/kg bw (rat)

35 % solution:LD50 1193 mg/kg bw (rat)

70 % solution: LD50 1026 mg/kg bw (rat)

LD50 Dermal 35% solution: LD50 > 2000 mg/kg bw (rabbit)

70 % solution: LD50 9200 mg/kg bw (rabbit) LC50 Inhalation

50% solution: LC50 > mg/m3 (rat) (4-hr)

Hydrogen Peroxide vapors:

LC0 9400 mg/m³ (mouse) (5 - 15 minutes)

Hydrogen Peroxide vapors:

LC50 > 2160 mg/m³ (mouse)

Serious eye damage/eye irritation Corrosive. Severely irritating to the eyes. Skin corrosion/irritation Moderately irritating (rabbit).

Sensitization Did not cause sensitization on laboratory animals. Information on toxicological effects

Symptoms Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity This product contains hydrogen peroxide. The International Agency for Research on Cancer (IARC) has conculded that there is inadequate evidence for carcinogenicity of hydrogen peroxide in humans, but limited evidence in experimental animals (Group 3 - not classifiable as to its carcinogenicity to humans). The American Conference of Governmental Industrial Hygienists (ACGIH) has concluded that hydrogen peroxide is a 'Confirmed Animal Carcinogen with Unknown Relevance to Humans' (A3)

Mutagenicity This product is not recognized as mutagenic by Research Agencies In vivo tests did not show mutagenic effects Reproductive toxicity This product is not recognized as reprotox by Research Agencies. No toxicity to reproduction in animal studies. STOT - single exposure Not classified. STOT - repeated exposure Not classified.

12. Ecological information

Ecotoxicity

Ecotoxicity effects Hydrogen peroxide is naturally produced by sunlight (between 0.1 and 4 ppb in air and 0.001 to 0.1 mg/L in water). Not expected to have significant environmental effects.

Persistence and degradability Hydrogen peroxide in the aquatic environment is subject to various reduction or oxidation processes and decomposes into water and oxygen. Hydrogen peroxide half-life in freshwater ranged from 8 hours to 20 days, in air from 10 - 20 hours, and in soils from minutes to hours depending upon microbiological activity and metal contamination. Bioaccumulation Material may have some

potential to bioaccumulate but will likely degrade in most environments before accumulation can occur.

Mobility Will likely be mobile in the environment due to its water solubility but will likely degrade over time.

Other Adverse Effects Decomposes into oxygen and water. No adverse effects

13. Disposal considerations

Waste disposal methods Dispose of in accordance with local regulations. Can be disposed as waste water, when in compliance with local regulations.

US EPA Waste Number D001 Contaminated Packaging Dispose of in accordance with local regulations.

Drums - Empty as thoroughly as possible. Triple rinse drums before disposal. Avoid contamination; impurities accelerate decomposition. Never return product to original container.

14. Transport information

DOT

UN/ID no 2014

Proper Shipping Name HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Hazard class 5.1

Subsidiary class 8

Packing Group II

TDG

UN/ID no UN 2014

Proper Shipping Name HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Hazard class 5.1

Subsidiary class 8

Packing Group II

ICAO/IATA Air regulation permit shipment of Hydrogen Peroxide (=40%) in non-vented containers for Air Cargo Only aircraft, as well as for Passenger and Cargo aircraft. HOWEVER, all PeroxyChem Hydrogen Peroxide containers are vented and therefore, air shipments of PeroxyChem H2O2 are not permitted. IATA air regulations state that venting of packages containing oxidizing substances is not permitted for air transport.

IMDG/IMO

UN/ID no UN 2014

Proper Shipping Name HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Hazard class 5.1

Subsidiary Hazard Class 8

Packing Group II

15. Regulatory information

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard Yes

Chronic health hazard No

Fire hazard Yes

Sudden release of pressure hazard No

Reactive Hazard No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

FIFRA INFORMATION

EPA Pesticide registration number 72372-4

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER Corrosive.

Causes irreversible eye damage and skin burns.

MAY BE FATAL IF INHALED

16. Other information

The information provided about the product on this Safety Data Sheet has been compiled from knowledge of the individual constituents.The data given here is based on current knowledge and experience. This Safety Data Sheet describes the product .in terms of safety requirements and does not signify any warranty with regard to the product's properties The data given here only applies when product used for proper application(s). The product is not sold as suitable for other applications - usage in such may cause risks not mentioned in this sheet. Do not use for other.