

1. Product and Company Identification

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Product Name : Sodium Chlorite Solution 25%
Part Number : RXSOL-42-1977-030

Company Details:

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

Branch : Kandla, Mumbai , Chennai, Vizag, Kolkata, UAE , OMAN and CANADA

Phone +91 22 20871200 - 1400
Fax +91 22 2761 2100 ::AOH :0091 9821214367
Email 123@rxmarine.com
Website www.rxmarine.com

2. Composition / Information on ingredients

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Name of Substance	Cas Number
Sodium Chlorite	7758-19-2
Sodium Hydroxide	1310-73-2
Sodium Carbonate	497-19-8
Non Hazardous Compound	Proprietary

3. Hazards Identification

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Signal Word	Danger
Hazard Statements	H302 Harmful if swallowed. H311 Toxic in contact with skin. H314 Causes severe skin burns and eye damage. H373 May cause damage to organs through prolonged or repeated exposure. H400 Very toxic to aquatic life. H412 Harmful to aquatic life with long lasting effects. EUH032 Contact with acids liberates very toxic gas.
Precautionary statements - prevention	P260 Do not breathe vapour/spray. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection
Precautionary statements - response	P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P391 Collect spillage. P405 Store locked up. P501 Dispose of contents/container in accordance with national regulations.

4. First Aid Measures

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Eye Contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. If still present, after the first five minutes, then continue to rinse for at least 15 minutes. Get medical attention if irritation persists.
Skin Contact	Wash off immediately with soap and plenty of water. Get medical attention if irritation persists.
Inhalation:	If inhaled, remove from area to fresh air. Get medical attention if breathing becomes difficult.
Ingestion:	If swallowed, call a poison control center or doctor immediately for treatment. Drink plenty of water.
General Advice	Chlorine dioxide vapors are emitted when this product is inhaled, monitor patient closely for delayed development of symptoms 48-72 hours post inhalation. See Section 11 for Toxicological Information.

5. Fire-fighting Measures

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Flamibility / Flash point	Not Applicable
Suitable extinguishing media	Extinguish with carbon dioxide, dry chemical, foam.
Protective Equipment	Use personal protective equipment.
Hazardous combustion products	Disodium oxide. Hydrogen chloride. Oxygen. Carbon monoxide. Chlorine donors will produce chlorine dioxide gas. Keep the chlorine dioxide concentration low.
Advice for firefighters	As in any fire, wear self-contained breathing apparatus.
Specific extinguishing methods	Approach fire from upwind to avoid hazardous quantities of water as fog or spray. This product is not flammable. Use water spray to keep fire-exposed containers cool. Do not use water spray to keep fire-exposed containers cool. Firefighters should wear full protective clothing and positive pressure self-contained breathing apparatus.

6. Accidental Release Measures

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Personal precautions, protective equipment and emergency procedures	Immediately evacuate personnel to safe areas. Keep personnel upwind and upwind of spill/leak. Wear appropriate protective clothing. Do not touch damaged containers or spilled material. Notify authorities if significant spill occurs. See section 8 of the SDS. DO NOT USE RAGS, SAWDUST, etc.
Environmental Precaution	Avoid release to the environment. Avoid discharge to water. Notify local authorities in case of spillage to drain/aquatic life.
Methods and materials for containment and cleaning up	Isolate spill area and deny entry to unnecessary personnel. Avoid such as flames, hot glowing surfaces or electric sparks. Notify appropriate personnel. Cleanup personnel must wear appropriate protective clothing. Notify all downstream water users of possible contamination.

7. Handling and Storage

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Advice on safe handling	Use only in a well-ventilated area. Wear chemical protective clothing. Do not breathe mist or vapor. Do not taste or swallow. Keep away from open flame, sources of heat or sources of ignition. Do not use product dry. When using, do not eat, drink or smoke. Do not use on flammable materials. Observe good industrial hygiene practices.
Storage	Store in a cool, dry place out of direct sunlight. Keep container clearly identified, clear of obstruction and accessible. Keep away from incompatible materials (see Section 10 of the SDS). Do not store near combustible materials. Do not handle near ignition.
Advice on general occupational hygiene	Use good work and personal hygiene practices to avoid exposure. Wash hands before eating, drinking or smoking.

8. Exposure controls and personal protection

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Engineering Controls

Personal Protection

Exposure Control

Hygiene measures

Good general ventilation (typically 10 air changes matched to conditions. If applicable, use process engineering controls to maintain airborne levels below recommended levels. If not established, maintain airborne levels to an acceptable level. Use a system to capture mist or fume. Do not use wood chips or shavings for entry into bearings or gear boxes, which could cause damage.

Eye/face protection : Wear safety glasses with side shields. Have an emergency eye wash fountain and quick drench shower available.

Skin protection:

Hand protection Gloves impervious to the material being handled. Advice should be sought from glove supplier.

Respiratory protection : In case of insufficient ventilation, a NIOSH/MSHA approved air-purifying respirator may be used. If pressure, air-supplied respirator may be used to protect against the circumstances where airpurifying respirators may not be adequate (see CFR 1910.134). Seek advice from respiratory protection specialist.

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of the chemical hazards and the risk of exposure. If in a mixture with other products or fluids, additional assessment of risk may be required. The risk of exposure should be assessed from workplace to workplace and should be assessed for each workplace.

Keep from contact with clothing and other personal items. Remove clothing promptly. Upon completion of work, wash hands thoroughly. Use shower facilities. When using do not smoke. Always observe good hygiene after handling the material and before eating, drinking or using protective equipment to remove contaminants.



Gloves

Suit

9. Physical and chemical properties

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Form	Liquid
Apperance	Clear, water white to slightly yellow
Odour	Faint bleach-like odour
Odor threshold	Not applicable
Flash Point	Not Determine
Boiling Point	106 °C (1013 hPa)
Freezing Point	3°C (37.4°F)
pH	11-13
Evaporation rate	No information available
Flammability (solid, gas)	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available

Explosive properties	No data available
Vapor pressure	19.87 hPa (20?)
Vapor density	No information available
Specific gravity	1.28 - 1.31 @ 20°C
Relative density	Not Available
Water solubility	Miscible in water
Solubility in other solvents	No data available
Partition coefficient: octanol	No data available
Autoignition temperature	No data available
Thermal decomposition	No data available
Viscosity, kinematic	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Dynamic viscosity	No data available
Formula	NaClO ₂
Molecular Weight	90.45

10. Stability and reactivity

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Reactivity	Not reactive under normal temperatures and pressures
Stability	Stable in itself, but reactive as detailed below.
Possibility of hazardous reactions	Avoid heat, flames, sparks and other sources of ignition. Avoid evaporation to dryness. Dried material can ignite up combustibles. Avoid contamination with foreign materials. Avoid exposure to sunlight or ultraviolet light.
Incompatible materials	acids. reducing agents. combustible material. oxidizing agents. hypochlorite. organic solvents and compounds.garbage materials. household products. chemicals. soap products. paint products. vinegar, beverages,oils, pine oil, dirty rags, su rubber, or any other foreign matter.
Hazardous Decomposition	Chlorine dioxide is formed on contact with acids, Thermal decompositionproducts include chlorine and oxides of sodium
Condition to Avoid	Keep away from heat, sparks and open flame. Keep away from direct sunlight and contact with incompatible material may react with reducing agents.
Polymerization	Hazardous polymerization does not occur.

11. Toxicological information

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Acute toxicity	INHALATION Inhalation may cause irritation of the mucous membranes and respiratory tract. Symptoms may include coughing, bloody nose, and sneezing. Severe overexposures may cause lung damage. ANIMAL TOXICOLOGY Inhalation LC50: No available data Dermal LD50: > 2 g/kg (rabbit) Oral LD50: 165 mg/kg (rat)
CHRONIC TOXICITY	INHALATION There is no available data on the chronic effects of inhaling sodium chlorite. SKIN There are no studies or reports on the repeated effects of dermal exposure to sodium chlorite. Because of the acute effects, repeated direct contact may be unlikely INGESTION The chronic ingestion of low concentrations of this product has been studied in laboratory animals. Concentrations in the drinking water of 100 ppm and higher have been shown to cause mild anemia and a minor suppression of thyroid functions in laboratory animals. All effects were reversible after cessation of treatment. Clinical studies of communities using sodium chlorite as a disinfectant found no adverse effects in the human population studied. However, other studies have suggested that those individuals deficient in an enzyme (G6PD) utilized in hemoglobin synthesis might be susceptible to the development of anemia if exposed repeatedly. Repeated exposures to solutions of chlorine dioxide at concentrations of 10-100 ppm have produced slight effects upon the thyroid in younger animals and the hematologic system. Exposures to these concentration can reduce the cellular and blood levels of glutathione, an agent which is protective against the oxidizing effect of

this chemical. Exposure of laboratory animals above 100 ppm in the drinking water have shown a decrease in blood cell glutathione, red blood cell count and hemoglobin. In some studies these levels also caused a slight decrease in thyroid hormones, especially in younger animals.

CARCINOGENICITY

Sodium chlorite is not listed by NTP, IARC, OSHA, EPA, or any other authority as a carcinogen. Carcinogenicity studies conducted in mice and rats did not show an increase in tumors in animals exposed to sodium chlorite in their drinking water.

MUTAGENICITY

Sodium chlorite has been evaluated for possible mutagenic effects in several laboratory tests. Sodium chlorite tested positive in the Ames Salmonella reverse mutation assay without metabolic activators and caused chromosomal aberrations in an in vitro Chinese hamster fibroblast cell line without metabolic activators. Sodium chlorite also tested positive in the mouse micronucleus assay when administered intraperitoneally (directly into the body cavity), but was not mutagenic when administered orally. The significance of these test results for human health is unclear because the oxidizing effects of the chlorite or salting effects of sodium may significantly affect the ability of the tests to accurately detect mutagens.

Reproductive Toxicity

Sodium chlorite has not been found to be teratogenic in studies in which animals have been exposed up to 100 ppm in the drinking water. Male rats repeatedly exposed to concentrations of 100 ppm or greater in the drinking water have shown slight effects on sperm motility. No effects were observed at 10 ppm and no effects were observed on fertility rate, histology of the male reproductive system or conception rate of animals exposed at 10 ppm or higher. The CMA conducted a two-generation reproductive rat study with developmental neurotoxicity to evaluate the effects of sodium chlorite on reproduction and pre- and postnatal development when administered orally via drinking water for two successive generations. Sodium chlorite was administered at 0, 35, 70, and 300 ppm in drinking water to male and female Sprague Dawley rats for ten weeks prior to mating. Dosing continued during the mating period, pregnancy and lactation. The final report concluded that there were no meaningful treatment related effects at any dose level for systemic, reproductive/ developmental, and developmental neurological end points. Hematological effects and reduced body weight gains were observed in some treatment groups.

Aspiration hazard

Not applicable.

Other information

Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

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Toxicity

This product is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to the discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority.

Aquatic Toxicity

LC50 rainbow trout = 290 mg/l as 80% NaClO₂ (96 hour); bluegill = 265-310 mg/l as 80% NaClO₂ (96 hour);
Sheepshead minnow = 62-90 ppm (96 hour).

Invertebrate Toxicity

LC50 Daphnia Magna = 0.29 mg/L as 80% NaClO₂ (48 hour)

Other Toxicity

Acute TL50 for Rainbow Trout: 50.6 mg/l (as 80% NaClO₂)
Acute LC50 (96 Hours) for Rainbow Trout: 290 mg/l (as 80% NaClO₂)
Acute TL50 for Bluegill: 208 mg/l (as 80% NaClO₂)
Acute LC50 (96 Hours) for Bluegill: 265-310 mg/l (as 80% NaClO₂)
Acute LD50 Mallard Ducks: 0.49-1.00 g/kg (gavage) (as 80% NaClO₂)
Acute LD50 Bobwhite Quail: 0.66 g/kg (gavage) (as 80% NaClO₂)
Acute LC50 (48 Hours) for Daphnia Magna: 0.29 mg/l (as 80% NaClO₂)
Sodium chlorite in the diet of birds was not acutely toxic. Eight-day dietary LC50's in mallard ducks and bobwhite quail were both greater than 10,000 ppm in the diet

Biodegradatio

This material is inorganic and not subject to biodegradation; however, chlorite ions are reduced by some bacteria under anaerobic conditions.

This material will eventually degrade to sodium chloride.

Persistence

This material will eventually degrade to sodium chloride.

13. Disposal considerations

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Remarks

Dispose in accordance with all applicable regulations. Do not dispose of partially filled containers into the trash or waste containers. Do not mix with other materials to cause a reaction and fire. Contact Technical Service for more information. Do not discharge into water supplies and sewers. May be subject to disposal regulations.

Waste Disposal

The product should not be allowed to enter drains, sewers, or waterways. Recycling is preferred to disposal or incineration. If recycling is not available, follow local disposal regulations. Dispose of wastes in an approved waste disposal facility.

14. Transport information

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Regulatory Information	Informant	UN Number	Proper Shipping Name	Classes	Packing Group	Other Information
DOT Classification		UN1908	Chlorite solution	8	II	Marine Pollutant A3, A6, A7, B2, IB2, N34, T7, TP2, TP24
IMDG Class		UN1908	Chlorite solution	8	II	Marine Pollutant Emergency schedules (EmS) F-A, S-B
IATA-DGR Class		UN1908	Chlorite solution	8	II	Marine Pollutant Passenger aircraft 851: 1 L Cargo aircraft 855: 30 L

15. Regulatory information

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Regulations

OSHA REGULATORY STATUS:
This material is considered hazardous by the OSHA HCS (29 CFR 1910.1200)
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES
Not regulated.
SARA EHS Chemical (40 CFR 355.30)
Not regulated
EPCRA SECTIONS 311/312 HAZARD CATEGORIES
Acute Health Hazard
EPCRA SECTION 313 (40 CFR 372.65):
Not regulated.
OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119)
Not regulated

International inventories

WORKPLACE HAZARDOUS MATERIALS INFORMATION
CLASSIFICATION
WHMIS Classifications applicable to this product:
E (Corrosive Material) based on assignment to TDG Class 3
CANADIAN ENVIRONMENTAL PROTECTION ACT
All components of this product are on the Domestic Substances List
HAZARDOUS PRODUCTS ACT
This product has been classified in accordance with the Hazardous Products Regulations (CPR)

Europe

EINECS No.: 231-836-6
STATE REGULATIONS
CALIFORNIA PROPOSITION 65
Sodium Chlorite does not appear on the California Proposition 65 list.

Other Information

The information above is believed to be accurate and is available to us. However, we make no warranty of accuracy, implied, with respect to such information, and we advise that you should make their own investigations to determine the suitability for particular purposes. In no event shall we be liable for any damages, including for lost profits or any special, indirect, incidental, or consequential damages arising, even if **RX Marine International** has been advised of the possibility of such damages.

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