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Material Safety Data Sheet
Sodium chlorate

Section 1: Chemical Product and Company Identification

Product Name : Sodium chlorate
Chemical Formula : $NaClO_3$
Company Identification : Tradeasia International Pte Ltd
Email : contact@chemtradeasia.com

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS#	% by Weight
Sodium chlorate	7775-09-9	100

Toxicological Data on Ingredients: Sodium chlorate: ORAL (LD50): Acute: 1200 mg/kg [Rat]. 3600 mg/kg [Mouse (RTECS)]. 7200 mg/kg [Rabbit]. DUST (LC50): Acute: >28000 mg/m 1 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator). Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, lungs. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of combustible materials, of organic materials, of metals.

Explosion Hazards in Presence of Various Substances: Risks of explosion of the product in presence of mechanical impact: Not available. Explosive in presence of open flames and sparks, of heat. Slightly explosive in presence of combustible materials, of organic materials, of metals.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: It is a strong oxidizer, reacting with organic materials, also creating a fire hazard when splashed on clothing. Releases ClO2 in presence of heat. May ignite combustibles (wood, paper, oil, clothing) It will accelerate burning when involved in a fire. Mixtures with ammonium salts, powdered metals, phosphorus, silicon, sulfur, or sulfides are readily ignited. Paper impregnated with sodium chlorate can be ignited by static sparks. Combustion by products include chlorine, chlorine dioxide, and sodium oxide.

Special Remarks on Explosion Hazards: May explode from heat or contamination. May react explosively with hydrocarbons (fuels). Mixtures with ammonium salts, powdered metals, phosphorus, silicon, sulfur, or sulfides are readily ignited. and potentially explosive. Mixtures with fibrous or absorbent organic materials (charcoal, flour, shellac, sawdust, sugar) are hazardous and can be caused to explode by static friction or shock. It may react explosively with alkenes + postassium osmate, aluminum + rubber, grease, leather, nonmetals, sulfides, cyanides, cyanoborane oligomer, organic matter, paint + polyethylene, sodium phosphinate. Mixtures with finely divided combustible materials can react explosively. May react explosively with some metals.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill: Oxidizing material. Organic peroxide. Stop leak if without risk. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not use metal tools or equipment. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions: Keep away from heat. Keep away from sources of ignition. Keep away from combustible material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, combustible materials, organic materials, metals, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalis, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance : Solid. (Crystals solid.)
Odor : Odorless.
Taste : Saline.
Molecular Weight : 106.45 g/mole
Color : White to yellowish.
pH (1% soln/water) : Not available.
Boiling Point : Not available.
Melting Point : 248°C (478.4°F)
Critical Temperature : Not available.
Specific Gravity : Density: 2.5 (Water = 1)
Vapor Pressure : Not applicable.

Vapor Density	**:** Not available.
Volatility	**:** Not available.
Odor Threshold	**:** Not available.
Water/Oil Dist. Coeff.	**:** Not available.
Ionicity (in Water)	**:** Not available.
Dispersion Properties	**:** See solubility in water.
Solubility	**:** Easily soluble in cold water. Soluble in liquid ammonia, glycerin. Solubility in water: 790 g/l @ 0 deg. C; 2300 g/l @ 100 deg. C. Solubility in 90% alcohol: 16 g/kg.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, ignition sources, incompatible materials

Incompatibility with various substances: Highly reactive with combustible materials, organic materials, metals. Reactive with reducing agents, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: It is a strong oxidizer, reacting with organic materials, also creating a fire hazard when splashed on clothing. Releases ClO2 in presence of heat. Mixtures with ammonium salts, powdered metals, phosphorus, silicon, sulfur, or sulfides are readily ignited and potentially explosive. Paper impregnated with sodium chlorate can be ignited by static sparks. Violent reaction or ignition with aluminum, ammonium sulfate, Sb2S3, arsenic, arsenic trioxide, 1,3-bis(trichloromethylbenzene) + heat, carbon, charcoal, MnO2, phosphorus, potassium cyanide, osmium + heat, paper, thiocyanates, triethylene glycol + wood, zinc. It can also react violently with paper, metal sulfides, dibasic organic acids, organic matter.

Special Remarks on Corrosivity: Corrosive to zinc and mild steel.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 1200 mg/kg [Rat]. Acute toxicity of the dust (LC50): >28000 mg/m3 1 hours [Rat].

Chronic Effects on Humans: MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, lungs.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Lethal Dose/Conc 50% Kill: LD50 [Mouse] - Route: Oral; Dose: 8300 mg/kg (HSDB). Lowest Published Lethal Dose: LDL [Human] - Route: Oral; Dose: 214 mg/kg

Special Remarks on Chronic Effects on Humans: May affect genetic material (mutagenic). Although no information has been found regarding the reproductive hazards of Sodium Chlorate, substances which can induce methemoglobinemia are of concern for possible reproductive effects since the fetus has an increased oxygen demand. Fetal hemoglobin is more easily oxidized to methemoglobin than is adult hemoglobin, and fetal methemoglobin is reduced back to normal more slowly than the adult form.

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: It may severely irritate the skin. It is not readily absorbed through intact skin. Eyes: It may severely irritate the eyes.

Inhalation: It can irritate the nose and throat and cause coughing, but it is not clear how much can be absorbed through the lungs. It may cause ulceration of the nasal septum. Ingestion: May be harmful if swallowed. It is a powerful inducer of Methemoglobinemia. It acts catalytically to induce Methemoglobinemia. The rate of methemoglobin formation is fairly slow, and dangerous levels can occur insidiously and without warning. Effects of sodium chlorate poisoning include gastrointestinal tract irritation with nausea, vomiting, abdominal pain, diarrhea. Other symptoms may include staggering, dizziness, faintness, cardiovascular collapse, pallor, cyanosis, shortness of breath, massive hemolysis, anemia, dark-colored/bloody urine, anuria, kidney failure from tubular deposition of red blood cell breakdown products, coma, and convulsions.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short-term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 5.1: Oxidizing material.

Identification: Sodium chlorate UNNA: 1495 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations: Connecticut hazardous material survey.: Sodium chlorate Rhode Island RTK hazardous substances: Sodium chlorate Pennsylvania RTK: Sodium chlorate Massachusetts RTK: Sodium chlorate Massachusetts spill list: Sodium chlorate New Jersey: Sodium chlorate TSCA 8(b) inventory: Sodium chlorate

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS C: Oxidizing material.

DSCL (EEC):

HMIS (U.S.A.):
Health Hazard: 2
Fire Hazard: 0
Reactivity: 0
Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2
Flammability: 0
Reactivity: 0
Specific hazard:

Protective Equipment: Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.
Other Special Considerations: Not available.

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