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## Material Safety Data Sheet

### Sodium perchlorate MSDS

#### Section 1: Chemical Product and Company Identification

**Product Name:** Sodium perchlorate

**Catalog Codes:** SLS2302

**CAS#:** 7601-89-0

**RTECS:** SC9800000

**TSCA:** TSCA 8(b) inventory: Sodium perchlorate

**CI#:** Not applicable.

**Synonym:** Formic Acid, 85%

**Chemical Name:** Sodium Perchlorate

**Chemical Formula:** NaClO<sub>4</sub>

**Contact Information for Emergency:** (0086) 551 65418678

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#### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	%By Weight
Sodium perchlorate	7601-89-0	100

**Toxicological Data on Ingredients:** Sodium perchlorate: ORAL (LD50): Acute: 2100 mg/kg [Rat].

#### Section 3: Hazards Identification

**Potential Acute Health Effects:**

Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by

itching, scaling, reddening, or,occasionally, blistering.

**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 blood, kidneys, liver, thyroid. 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 immediately.

**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**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.

**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:** Not applicable.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available. Highly explosive in presence of reducing materials, of combustible materials, of organic materials, of metals, of acids. Explosive in presence of open flames and sparks.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:**

Mixtures with perchlorates and organic materials, or combustible materials, or oxidizable materials are easily ignited by friction or heat.

**Special Remarks on Explosion Hazards:**

Explosive decomposition may occur under fire conditions. Forms explosive mixtures with alcohols. Mixture of calcium hydride or strontium hydride and perchlorates explodes violently when rubbed in a mortar. Forms explosive mixtures with combustible, organic or other easily oxidizable materials. These mixtures are easily ignited by friction or heat. Explosive in contact with concentrated sulfuric acid. Perchlorates explode when mixed with reducing agents or when projected into red-hot charcoal.

Powdered magnesium plus sodium perchlorate is a friction-sensitive explosive mixture.

**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 locked up.. Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Do not ingest. Do not breathe dust. 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, moisture.

**Storage:**

Hygroscopic (deliquescent). Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalies, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers. Do not store above 23° C (73.4° F).

**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. (Crystalline solid. Deliquescent)

**Odor:** Not available.

**Taste:** Not available.

**Molecular Weight:** 122.44 g/mole

**Color:** White.

**pH (1% soln/water):** Not available.

**Boiling Point:** Not available.

**Melting Point:** 480° C (896° F)

**Critical Temperature:** Not available.

**Specific Gravity:** 2.52 (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 hot water. Soluble in cold water.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatible materials, combustible materials, organic materials, moist air or water.

**Incompatibility with various substances:**

Extremely reactive or incompatible with reducing agents, combustible materials, organic materials, metals, acids.

Reactive with moisture.

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Reactivity:**

Oxidizer. Hygroscopic (Deliquescent). Absorbs moisture from the air. Incompatible with combustible materials, organic materials, moisture, strong acids, reducing agents, finely powdered metals, magnesium.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

**Routes of Entry:** Inhalation. Ingestion.

**Toxicity to Animals:** Acute oral toxicity (LD50): 2100 mg/kg [Rat].

**Chronic Effects on Humans:**

**MUTAGENIC EFFECTS:** Mutagenic for bacteria and/or yeast. May cause damage to the following organs: blood, kidneys, liver, thyroid.

**Other Toxic Effects on Humans:** Very hazardous in case of skin contact (irritant), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:**

Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: Causes eye irritation. Inhalation: May be harmful if inhaled. May cause respiratory tract irritation. May also affect the kidneys if inhaled. Ingestion: May be harmful if swallowed. May cause irritation of the digestive tract with nausea and vomiting. May also affect behavior, respiration (dyspnea), metabolism, blood, and liver. Chronic Potential Health Effects: May cause liver and kidney damage.

## 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 perchlorate UNNA: 1502 PG: II

**Special Provisions for Transport:** Not available.

## Section 15: Other Regulatory Information

**Federal and State Regulations:**

Pennsylvania RTK: Sodium perchlorate Florida: Sodium perchlorate Massachusetts RTK: Sodium perchlorate New Jersey:

Sodium perchlorate TSCA 8(b) inventory: Sodium perchlorate

**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):**

R9- Explosive when mixed with combustible material. R22- Harmful if swallowed. S13- Keep away from food, drink and animal feedingstuffs. S22- Do not breathe dust. S27- Take off immediately all contaminated clothing.

**HMIS (U.S.A.):**

**Health Hazard: 3**

**Fire Hazard: 0**

**Reactivity: 2**

**Personal Protection: E**

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

**Health: 2**

**Flammability: 0**

**Reactivity: 1**

**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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