MATERIAL SAFETY DATA SHEET

SECTION 1. Product and Company Identification

Product Name and Synonym: Sodium Chlorate
Product Code: S2655
Material Uses: Science Stuff
Manufacturer: 1104 Newport Ave
Science Stuff
Austin, TX  78753
(512) 837-6020

Entry Date : 6/19/2013
Print Date: 6/19/2013
24 Hour Emergency Assistance : Chemtrec 800-424-9300
Canutec  613-996-6666

SECTION 2 HAZARD IDENTIFICATION

Health: 2
Flammability: 0
Reactivity: 0

Hazard Rating:
Least Slight Moderate High Extreme
0 1 2 3 4
NA=Not Applicable NE=Not Established

SECTION 3 MIXTURE COMPONENTS

<table>
<thead>
<tr>
<th>SARA 313</th>
<th>Component</th>
<th>CAS Number</th>
<th>Percent Comp.</th>
<th>Dimension</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sodium Chlorate</td>
<td>CAS# 7775-09-9</td>
<td>100%</td>
<td>W/W</td>
<td>OSHA TWA 15 mg/m³</td>
</tr>
</tbody>
</table>

SECTION 4 FIRST AID MEASURES

Heat, shock, friction, or contact with other materials may cause fire or explosion. Harmful if swallowed. Avoid breathing vapor or dust. Use adequate ventilation. Avoid contact with eyes, skin or clothes. Wash thoroughly after handling. Keep closed.

FIRST AID:  SKIN: Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention
EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen
INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious person.

SECTION 5 FIRE FIGHTING MEASURES

Fire Extinguisher Type: Any means suitable for extinguishing surrounding fire
Fire / Explosion Hazards: Contact with oxidizers may cause explosion
Fire Fighting Procedure: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.
Sodium Chlorate

SECTION 6 ACCIDENTAL RELEASE MEASURES

Remove all sources of ignition. Ventilate area of leak or spill. Wear protective equipment. Clean up in a manner that doesn't disperse dust.

SECTION 7 HANDLING AND STORAGE

Store in a cool, dry, well-ventilated place away from incompatible materials. Wash thoroughly after handling.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: NIOSH approved dust mask
Ventilation
  Local Exhaust
  Mechanical
Protective Gloves: Wear appropriate gloves to prevent skin exposure
Eye Protection: Splash Goggles
Other Protective Equipment: Wear appropriate clothing to prevent skin exposure

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Melting Point</td>
<td>Decomposes</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>248° C</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
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<tr>
<td>Vapor Density</td>
<td>N/A</td>
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<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
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<tr>
<td>Appearance /Odors</td>
<td>White crystals, odorless</td>
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<tr>
<td>Flash Point</td>
<td>N/A</td>
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<tr>
<td>Specific Gravity</td>
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<tr>
<td>Percent Volatile by Volume</td>
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<tr>
<td>Evaporation Rate</td>
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<td>Evaporation Standard</td>
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<tr>
<td>Auto Ignition Temp</td>
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</tr>
<tr>
<td>Lower Flamm. Limit in Air</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper Flamm. Limit in Air</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

SECTION 10 STABILITY AND REACTIVITY INFORMATION

Stability: Stable
Conditions to Avoid: None known
Materials to Avoid: Oxidizers, aluminum, organics
Hazardous Decomposition Products: Chlorine and sodium oxide
Hazardous polymerization: Will Not Occur
Conditions to Avoid: None known

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. Chronic Potential Health Effects:

SECTION 12 Ecological Information

Ecotoxicity: Not available.
BODS 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 must be disposed of in accordance with federal, state and local environmental control regulations.

SECTION 14 Transport Information

DOT Classification: UN1495, Sodium Chlorate, 5.1, PG II

DOT Regulations may change from time to time. Please consult the most recent D.O.T. regulations.

SECTION 15 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:
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.
Other Classifications:
WHMIS (Canada): CLASS C: Oxidizing material.
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