Section 1 - Product and Company Information

Product Name: Sodium chloride  
Product Number: 83886  
Brand: Sigma Chemical  
Company: Sigma-Aldrich  
Street Address: 3050 Spruce Street  
City, State, Zip: SAINT LOUIS, MO 63103 US  
Technical Phone: 314 771 5765  
Fax: 800 925 5052  
Emergency Phone: 414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
<th>EC No</th>
<th>Annex</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM CHLORIDE</td>
<td>7647-14-5</td>
<td>No</td>
<td>231-598-3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Formulate**: NaCl  
- **Synonyms**: Common salt, Denarite, Extra Fine 200 Salt, Extra Fine 325 Salt, Halite, H.G. blending, Natriumchlorid (German), Purex, Rock salt, Saline, Salt, Sea salt, Table salt, Top flake, USP sodium chloride, White crystal

Section 3 - Hazards Identification

- **HMIS Rating**  
  - Health: 0  
  - Flammability: 0  
  - Reactivity: 0

- **NFPA Rating**  
  - Health: 0  
  - Flammability: 0  
  - Reactivity: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

- **Oral Exposure**: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

- **Inhalation Exposure**: If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

- **Dermal Exposure**: In case of contact, immediately wash skin with soap and copious amounts of water.

- **Eye Exposure**: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

- **Autoignition Temp**: N/A

- **Firefighting Protective Equipment**: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

- **Specific Hazard(s)**: Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

- **Methods for Cleaning Up**: Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

- **Handling**:  
  - User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

- **Storage**:  
  - Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

- **Engineering Controls**: Safety shower and eye bath. Mechanical exhaust required.

- **Personal Protective Equipment**:  
  - Respiratory: Wear dust mask  
  - Hand: Protective gloves  
  - Eye: Chemical safety goggles

- **General Hygiene Measures**: Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

- **Molecular Weight**: 58.44 AMU

- **pH**: 7

- **BP/MP Range**: 1,413 °C

- **Freezing Point**: N/A

- **Vapor Pressure**: 1 mmHg

- **Vapor Density**: N/A

- **Saturated Vapor Conc.**: N/A

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SG/Density 2.165 g/cm³
Bulk Density N/A
Odor Threshold N/A
Volatile% N/A
VOC Content N/A
Water Content N/A
Solvent Content N/A
Evaporation Rate N/A
Viscosity N/A
Partition Coefficient N/A
Decomposition Temp. N/A
Flash Point °F N/A
Flash Point °C N/A
Explosion Limits N/A
Flammability N/A
Autoignition Temp N/A
Solubility Solubility in Water: Soluble
Other Solvents: 360/100ML @ 20 °C.
N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable.
Strong oxidizing agents.

Hazardous Decomposition Products
Hazardous Decomposition Products
Sodium hydroxide, hydrogen chloride gas.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
May cause skin irritation.

Skin Absorption
May be harmful if absorbed through the skin.

Eye Contact
Sodium chloride (NaCl) in contact with eyes can cause irritation or redness due to abrasion.

Inhalation
May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion
May be harmful if swallowed.

Signs and Symptoms of Exposure
Ingestion of large amounts causes vomiting and diarrhea. Dehydration and congestion may occur in internal organs. Hypertonic salt solutions can produce inflammatory reactions in the gastrointestinal tract.

RTECS Number: V24525000

Toxicity Data
Oral - Rat: 3000 mg/kg (LD50)
Inhalation - Rat: > 42,000 mg/m³ (LC50)

Oral - Mouse: 4000 mg/kg (LD50)
Intraperitoneal - Mouse: 2692 mg/kg (LD50)
Subcutaneous - Mouse: 3.0 M/L (LD50)
Intravenous - Mouse: 645 mg/kg (LD50)
Intracerebral - Mouse: 131 mg/kg (LD50)
Skin - Rabbit: > 10000 mg/kg (LD50)

Irritation Data
Skin - Rabbit: 50 mg 24H
Remarks: Mild irritation effect
Skin - Rabbit: 500 mg 24H
Remarks: Mild irritation effect
Eyes - Rabbit: 100 mg
Remarks: Mild irritation effect
Eyes - Rabbit: 100 mg 24H
Remarks: Moderate irritation effect
Eyes - Rabbit: 10 mg
Remarks: Moderate irritation effect

Chronic Exposure - Teratogen
Species Route of Application Exposure Time
Rat 1710 mg/kg Intraperitoneal (13D PREG)
Result: Effects on embryo or fetus: Teratogenicity (except death, e.g., stunted fetus).
Specific Developmental Abnormalities: Musculoskeletal system.
Mouse 1900 mg/kg Subcutaneous (11D PREG)
Result: Effects on embryo or fetus: Teratogenicity

Chronic Exposure - Mutagen
Species Dose Cell Type Mutation test
Human 125 MMOL/L fibroblast DNA initiation
Rat 16800 mg/kg Oral 4W Unscheduled DNA synthesis
Rat 400 mg/kg Oral Other mutation test systems
Rat 2338 mg/kg Intraperitoneal Cytogenetic analysis
Mouse 101 MMOL/L lymphocyte DNA damage
Mouse 57200 U/L Oral lung Mutation in mammalian somatic cells.
Hamster 4 GML lymphocyte Micronuclear test
Hamster 275 MMOL/L ovary DNA damage
Hamster 160 MMOL/L ovary Cytogenetic analysis
Hamster 7500 MGL lung Cytogenetic analysis

Chronic Exposure - Reproductive Hazard
Species Route of Application Exposure Time
Woman 27 mg/kg Intraplacental (15W PREG)
Rat 145 GML Oral (7D PRE/1-22D PREG)
Result: Effects on newborn: Delayed effects.
Rat 56400 mg/kg Oral (5D PRE-21D POST)
Rat 10 GM/L Oral Intraperitoneal (17-20D PREG)
Result: Effects on newborn: Behavioral.
Rat 10 GM/L Parenteral (1D PRE)
Result: Maternal Effects: Ovaries, fallopian tubes.

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Rat
500 MG/KG
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per corpora lutea).
Intrauterine (4D PREG)
Rat
50 MG/KG
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Intrauterine (6D PREG)
Mouse
13440 MG/KG
Result: Effects on Fertility: Abortion
Subcutaneous (2-6D PREG)
Monkey
6 GM/KG
Result: Effects on Fertility: Abortion
Intrauterine (16W PREG)
Horse, donkey
480 MG/KG
Result: Maternal Effects: Other effects, Endocrine:Estrogenic, Effects on Embryo or Fetus: Fetal death.
Intraglacial (45D PREG)

Section 12 - Ecological Information
No data available.

Section 13 - Disposal Considerations
Appropriate Method of Disposal of Substance or Preparation
Contact a licensed professional waste disposal service to dispose of this material.
Dispose of or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information
DOT
Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.
IATA
Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information
United States Regulatory Information
SARA Listed: No
TSCA Inventory Item: Yes
Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information
Disclaimer
For R&D use only. Not for drug, household or other uses.
Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.