1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sodium bicarbonate

Cat No.: BP328-1; BP328-500; S233-3; S233-10; S233-50; S233-300LB; S233-500; S631-3; S631-10; S631-50; S635-3; S637-12; S637-50; S637-212

Synonyms: Sodium hydrogen carbonate; Sodium acid carbonate; Carbonic acid, monosodium salt (Crystalline/Powder/Certified ACS/USP/FCC/EP/BP/WP/JP)

Recommended Use: Laboratory chemicals

Company: Fisher Scientific

Emergency Telephone Number: CHEMTREC®, Inside the USA: 800-424-9300

CHEMTREC®, Outside the USA: 703-527-3887

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Irritating to eyes and skin. May cause irritation of respiratory tract. May cause adverse kidney effects.

Appearance: White

Physical State: Powder

odor: odorless

Target Organs: Eyes, Skin, Central nervous system (CNS), Kidney, Blood, Heart, Liver

Potential Health Effects

Acute Effects

Principle Routes of Exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Irritating to eyes.</td>
</tr>
<tr>
<td>Skin</td>
<td>Irritating to skin. May be harmful in contact with skin.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May cause irritation of respiratory tract. May be harmful if inhaled.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed. May cause adverse kidney effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.</td>
</tr>
</tbody>
</table>

Chronic Effects: Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects.

See Section 11 for additional Toxicological information.
Aggravated Medical Conditions

No information available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bicarbonate</td>
<td>144-55-8</td>
<td>99</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**Eye Contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

**Skin Contact**
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

**Inhalation**
Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

**Ingestion**
Do not induce vomiting. Obtain medical attention.

**Notes to Physician**
Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Flash Point**

<table>
<thead>
<tr>
<th>Method</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

**Autoignition Temperature**

No information available.

**Explosion Limits**

<table>
<thead>
<tr>
<th>Upper</th>
<th>No data available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Suitable Extinguishing Media**

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..

**Unsuitable Extinguishing Media**

No information available.

**Hazardous Combustion Products**

No information available.

**Sensitivity to mechanical impact**

No information available.

**Sensitivity to static discharge**

No information available.

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>1</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### 6. ACCIDENTAL RELEASE MEASURES
6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing.

Environmental Precautions
Should not be released into the environment.

Methods for Containment and Clean Up
Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. HANDLING AND STORAGE

Handling
Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Do not get in eyes, on skin, or on clothing.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Protect from moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Powder</td>
</tr>
<tr>
<td>Appearance</td>
<td>White</td>
</tr>
<tr>
<td>odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available.</td>
</tr>
<tr>
<td>pH</td>
<td>8.3 0.1M aq. solution</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information available.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>&gt;= 50°C</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>270°C / 518°F</td>
</tr>
<tr>
<td>Decomposition temperature °C</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Slightly soluble in water</td>
</tr>
<tr>
<td>log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>84.01</td>
</tr>
</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Formula C H Na O3

10. STABILITY AND REACTIVITY

Stability
Moisture sensitive. heat sensitive.

Conditions to Avoid
Avoid dust formation. Incompatible products. Exposure to moist air or water. Excess heat. Temperatures above 50°C.

Incompatible Materials
Strong oxidizing agents, Acids

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO₂), Sodium oxides

Hazardous Polymerization
Hazardous polymerization does not occur

Hazardous Reactions
Thermal decomposition.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bicarbonate</td>
<td>4220 mg/kg (Rat)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Irritation
Irritating to eyes and skin

Toxicologically Synergistic Products
No information available.

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product

Sensitization
No information available.

Mutagenic Effects
Mutagenic effects have occurred in experimental animals.

Reproductive Effects
Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects
Developmental effects have occurred in experimental animals.

Teratogenicity
No information available.

Other Adverse Effects
See actual entry in RTECS for complete information.

Endocrine Disruptor Information
No information available.
12. ECOLOGICAL INFORMATION

Ecotoxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bicarbonate</td>
<td>EC50: 650 mg/L/120h</td>
<td>Not listed</td>
<td>Not listed</td>
<td>EC50: 2350 mg/L/48h</td>
</tr>
</tbody>
</table>

Persistence and Degradability

No information available

Bioaccumulation/ Accumulation

No information available

Mobility

No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT

Not regulated

TDG

Not regulated

IATA

Not regulated

IMDG/IMO

Not regulated

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>CHINA</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bicarbonate</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>205-633-8</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>KE-31360</td>
</tr>
</tbody>
</table>

Legend:

X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

**TSCA 12(b)** Not applicable

**SARA 313**
Not applicable

**SARA 311/312 Hazardous Categorization**
- Acute Health Hazard: No
- Chronic Health Hazard: No
- Fire Hazard: No
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

**Clean Water Act**
Not applicable

**Clean Air Act**
Not applicable

**OSHA**
Not applicable

**CERCLA**
Not Applicable

**California Proposition 65**
This product does not contain any Proposition 65 chemicals.

**State Right-to-Know**
Not applicable

**U.S. Department of Transportation**
- Reportable Quantity (RQ): N
- DOT Marine Pollutant: N
- DOT Severe Marine Pollutant: N

**U.S. Department of Homeland Security**
This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade**
No information available

**Canada**
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
Non-controlled

16. OTHER INFORMATION

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Tel: (412) 490-8929

Creation Date
29-Jan-2010

Print Date
29-Jan-2010

Revision Summary
“***”, and red text indicates revision

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS