Material Safety Data Sheet

Section 1 - Product and Company Information

Product Name: Carbonate-Bicarbonate Buffer
Product Number: C3041
Brand: Sigma Chemical
Company: Sigma Aldrich
Street Address: 3502 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63113 US
Technical Phone: 800-325-9332
Fax: 800-325-9332
Emergency Phone: 314-776-6555

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 Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARBONATE/BICARBONATE BUFFER</td>
<td>None</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS #</th>
<th>Percent</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information regarding the specific chemical identity of this material is being withheld as a trade secret of the manufacturer.</td>
<td>144-55-8</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SODIUM BICARBONATE</td>
<td>144-55-8</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SODIUM CARBONATE (ANHYDROUS)</td>
<td>-97-19-8</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Formula: Synonyms:

Section 3 - Hazards Identification

Emergency Overview: Inhalant. Irritating to respiratory system and skin. Risk of serious damage to eyes.

HMIS Rating
- Health: 2
- Flammability: 0
- Reactivity: 0

NFPA Rating
- Health: 2
- Flammability: 0
- Reactivity: 0

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

Section 4 - First Aid Measures

Dermal Exposure: If contact with skin occurs, immediately wash skin with soap and copious amounts of water.

Eye Exposure: In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media
- Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

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

Procedure(s) of Personal Precaution(s)
- Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

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: Do not breathe dust. 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: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.
- Hand: Wear chemical-resistant gloves.
- Eye: Chemical safety goggles.

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Sigma-Aldrich Corporation www.sigma-aldrich.com
General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance
Physical State
Solid

Molecular Weight: N/A

pH N/A
BP/Flash Range N/A
MP/Flash Point N/A
Freezing Point N/A
Vapor Pressure N/A
Vapor Density N/A
Saturated Vapor Conc. N/A
SO/Density N/A
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 'P' N/A
Flash Point 'C' N/A
Explosion Limits N/A

Flammability N/A
Autoignition Temp N/A
Solubility N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable

Materials to Avoid
Strong oxidizing agents.

Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide, Sodium/sodium oxide.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact
Causes skin irritation.

Skin Absorption
May be harmful if absorbed through the skin.

Eye Contact
Causes severe eye irritation.

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

Ingestion
May be harmful if swallowed.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: N/A

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. Dissolve 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

EU Additional Classification

Symbol of Danger: Xi
Indication of Danger Instant.

Risk Statements R: 36
Initiating to eyes.

Safety Statements S: 26
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

US Classification and Label Text
Indication of Danger Instant.

Risk Statements
Initiating to respiratory system and skin. Risk of serious damage to eyes.
Safety Statements
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection.

United States Regulatory Information
SARA Listed: No

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.