Material Safety Data Sheet

Section 1 - Product and Company Information

Product Name: Sodium bisulfite
Product Number: 59300
Brand: Sigma-Aldrich
Company: Sigma-Aldrich
Address: 2050, Sprouse Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 603-325-5632
Fax: 603-325-5632
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 213</th>
<th>EC no</th>
<th>Annex I Index Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM BISULFITE</td>
<td>7631-90-6</td>
<td>No</td>
<td>231-548-0</td>
<td>016 065-00-8</td>
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</tbody>
</table>

Formula: NaHSO3
Synonyms: Bisulfite de sodium (French), Hydrogen sulfite sodium, Monosodium sulfite, Sodium acid sulfite, Sodium bisulfite (AGSmin), Sodium bisulfite, Sodium hydrogen sulfite, Sodium sulfonate, Sulphurous acid, monosodium salt

Section 3 - Hazards Identification

Emergency Overview
Harmful. Harmful if swallowed. Contact with acids liberates toxic gas. Irritating to eyes, respiratory system and skin. Possible sensitizer.

HMIS Rating
Health: 2
Flammability: 0
Reactivity: 1

NFPA Rating
Health: 2
Flammability: 0
Reactivity: 1

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

Section 4 - First Aid Measures

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
Extinguishing Media
Suitable: 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)
Emit toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area.

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.

Special Requirements
Air and moisture sensitive.

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
Compatible chemical-resistant gloves.

Eye
Chemical safety goggles.
General Hygiene Measures
Wash thoroughly after handling.

Exposure Limits, RTECS

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA, NL</td>
<td>ACGIH</td>
<td>TWA</td>
<td>5 MG/M3</td>
</tr>
</tbody>
</table>

RTECS: check ACGIH TLV

Section 9 - Physical/Chemical Properties

**Appearance**

**Physical State**
Solid

**Molecular Weight**: 106.1 AMU

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>4.3</td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>N/A</td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
<td>N/A</td>
</tr>
<tr>
<td>S/G Density</td>
<td>1.32 g/cm3</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>N/A</td>
</tr>
<tr>
<td>Volatiles</td>
<td>0.0 %</td>
</tr>
<tr>
<td>VOC Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Water Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Solvent Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>N/A</td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>150 °C</td>
</tr>
<tr>
<td>Flash Point °F</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point °C</td>
<td>N/A</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>Flammability</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temp.</td>
<td>N/A</td>
</tr>
<tr>
<td>Retaractive Index</td>
<td>1.526</td>
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<tr>
<td>Solubility in Water:</td>
<td></td>
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<tr>
<td>390 mg/ml H2O, 16°C</td>
<td></td>
</tr>
</tbody>
</table>

N/A = not available

Section 10 - Stability and Reactivity

**Stability**

Stable

Stable.

**Conditions to Avoid**

Moisture.

Materials to Avoid

Strong acids, strong oxidizing agents.

Hazardous Decomposition Products

Sodium/iodine oxides, sulfur oxides

Hazardous Decomposition Products Formed Upon Contact with Water

Sulfur dioxide.

Hazardous Polymerization

Will not occur.

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 eye irritation.

Inhalation

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

Ingestion

Harmful if swallowed.

Sensitization

Sensitization

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals. Persons with allergies and/or asthma may exhibit hypersensitivity to sulfides.

Respiratory

Can cause pulmonary sensitization resulting in hyperventilation and airway dysfunction and pulmonary allergy accompanied by fatigue, malaise and itching. Significant symptoms of exposure can persist for more than two years and can be activated by a variety of nonspecific environmental stimuli such as automobile exhausts, perfumes and passive smoking.

Signs and Symptoms of Exposure

The chemical, physical, and toxicological properties of this product have not been thoroughly investigated.

Conditions Aggravated by Exposure

Warming: certain individuals with preexisting respiratory conditions such as asthma may experience hyperventilation to sulfides and sulfur dioxide. The symptoms include bronchoconstriction, bronchospasm, gastrointestinal disturbances, flushing, hypotension, tingling sensation, uticaria/angioedema, and shock.

RTECS Number: VZ000000

Toxicity Data

**Oral**

LD50: 2000 mg/kg (LD50)

**Intraperitoneal**

LD50: 475 mg/kg (LD50)

**Intravenous**

LD50: 115 mg/kg (LD50)

**Intramuscular**

LD50: 675 mg/kg (LD50)

**Intranasal**

LD50: 130 mg/kg (LD50)

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Lungs, Thorax, or Respiration: Respiratory depression.
Lungs, Thorax, or Respiration: Other changes.

intraperitoneal - Dog: 244 mg/kg (LD50)
Remarks: Behavioral, Convulsions or effect on seizure threshold.
Lungs, Thorax, or Respiration: CNS depression.
Lungs, Thorax, or Respiration: Respiratory depression.

intraperitoneal - Rabbit: 200 mg/kg (LD50)
Remarks: Behavioral, Convulsions or effect on seizure threshold.
Lungs, Thorax, or Respiration: CNS depression.
Lungs, Thorax, or Respiration: Respiratory depression.

intravenous - Rabbit: 65 mg/kg (LD50)
Remarks: Behavioral, Convulsions or effect on seizure threshold.
Lungs, Thorax, or Respiration: CNS depression.
Lungs, Thorax, or Respiration: Respiratory depression.

intraperitoneal - Guinea pig: 779 mg/kg (LD50)
intraperitoneal - Hamster: 487 mg/kg (LD50)
intravenous - Hamster: 95 mg/kg (LD50)
Remarks: Behavioral, Convulsions or effect on seizure threshold.
Lungs, Thorax, or Respiration: CNS depression.
Lungs, Thorax, or Respiration: Respiratory depression.
Lungs, Thorax, or Respiration: Other changes.

Chronic Exposure - Carcinogen
Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC Carcinogen List
Rating: Group 3

ACGIH Carcinogen List
Rating: A4

Chronic Exposure - Mutagen
Species | Dose | Cell Type | Mutation Test
--- | --- | --- | ---
Human | 100 μMUL | Lymphocyte | Microsomal test
Human | 50 μMUL | Lymphocyte | Other mutation tests system
Human | 37 μMUL | Lymphocyte | Cytogenetic analysis
Human | 5 μMUL | Lymphocyte | Sister chromatid exchange
Hamster | 5 MUL | Embryo | Morphological transformation.
Hamster | 40 MUL | Embryo | Cytogenetic analysis
Hamster | 500 MUL | Embryo | Sister chromatid exchange

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: Environmentally hazardous substances, solid, n.o.s.

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Section 15 - Regulatory Information

EU Directives Classification
Symbol of Danger: Xn
Indication of Danger: Harmful
Risk Statements: R: 22 31
Harmful if swallowed. Contact with acids liberates toxic gas.
Safety Statements: S: 25 46
Avoid contact with eyes. If swallowed, seek medical advice immediately and show this container or label.

US Classification and Label Text
Indication of Danger: Harmful
Risk Statements: Harmful if swallowed. Contact with acids liberates toxic gas. Irritating to eyes, respiratory system and skin.
Safety Statements: Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves. If swallowed, seek medical advice immediately and show this container or label.

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 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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