Section 1 - Product and Company Information

Product Name                  SODIUM BISULFITE ACS REAGENT
Product Number                S8890
Brand                         SIGMA

Company                      Sigma-Aldrich Canada, Ltd
Address                      2149 Winston Park Drive
                              Oakville ON L6H 6J8 CA
Technical Phone:             9058299500
Fax:                         9058299292
Emergency Phone:             800-424-9300

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM BISULFITE</td>
<td>7631-90-5</td>
<td>No</td>
</tr>
</tbody>
</table>

Formula          NaHSO3
Synonyms         Bisulfite de sodium (French) * Hydrogen sulfite sodium * Monosodium sulfite * Sodium acid sulfite * Sodium bisulfite (ACGIH) * Sodium bisulphite * Sodium hydrogen sulfite * Sodium sulhydrate * Sulfurous acid, monosodium salt
RTECS Number:    VZ2000000

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: 0

NFPA RATING
HEALTH: 2
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 not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

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

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
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 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
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</td>
<td>ACGIH</td>
<td>TWA</td>
<td>5 MG/M3</td>
</tr>
<tr>
<td>New Zealand</td>
<td>OEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks:</td>
<td>check ACGIH TLV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>NIOSH</td>
<td>TWA</td>
<td>5 MG/M3</td>
</tr>
</tbody>
</table>

Section 9 - Physical/Chemical Properties

Appearance | Physical State: Solid

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>106.1 AMU</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>4.3</td>
<td>Concentration: 10 g/l</td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Saturated Vapor Concent.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>SG/Density</td>
<td>1.32 g/cm³</td>
<td></td>
</tr>
<tr>
<td>Bulk Density</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Volatile%</td>
<td>0 %</td>
<td></td>
</tr>
<tr>
<td>VOC Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Water Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solvent Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Surface Tension</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>150 °C</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Refractive Index</td>
<td>1.526</td>
<td></td>
</tr>
<tr>
<td>Optical Rotation</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Data</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>Solubility in Water: 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: Air, Moisture.
Materials to Avoid: Strong acids, Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Sodium/sodium oxides, Sulfur oxides.
Hazardous Decomposition Products Formed Upon Contact with Water: Sulfur dioxide

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: May cause eye irritation.
Inhalation: Material may be 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 sulfites. Respiratory: Can cause pulmonary sensitization resulting in hyperactive airway dysfunction and pulmonary allergy accompanied by fatigue, malaise and aching. 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 exhaust, 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
Warning: certain individuals with preexisting respiratory conditions such as asthma may experience hypersensitivity to sulfites and sulfur dioxide. The symptoms include bronchoconstriction, bronchospasm, gastrointestinal disturbances, flushing, hypotension, tingling sensation, urticaria/angioedema, and shock.

TOXICITY DATA
Oral
Rat
2000 mg/kg
LD50

Intraperitoneal
Rat
475 MG/KG
LD50
Remarks: Behavioral: Convulsions or effect on seizure threshold. Behavioral: Altered sleep time (including change in righting reflex).

Intravenous
Rat
115 MG/KG  
LD50  
Remarks: Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Respiratory depression. Lungs, Thorax, or Respiration: Other changes.

Intraperitoneal  
Mouse  
675 MG/KG  
LD50  

Intravenous  
Mouse  
130 MG/KG  
LD50  
Remarks: Lungs, Thorax, or Respiration: Other changes. Lungs, Thorax, or Respiration: Respiratory depression. Behavioral: Convulsions or effect on seizure threshold.

Intraperitoneal  
Dog  
244 MG/KG  
LD50  

Intraperitoneal  
Rabbit  
300 MG/KG  
LD50  

Intravenous  
Rabbit  
65 MG/KG  
LD50  
Remarks: Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Other changes. 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: Lungs, Thorax, or Respiration: Other changes. Lungs, Thorax, or Respiration: Respiratory depression.
Behavioral: Convulsions or effect on seizure threshold.

**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: Human  
Dose: 100 UMOL/L  
Cell Type: lymphocyte  
Mutation test: Micronucleus test

Species: Human  
Dose: 50 UMOL/L  
Cell Type: lymphocyte  
Mutation test: Other mutation test systems

Species: Human  
Dose: 375 UMOL/L  
Cell Type: lymphocyte  
Mutation test: Cytogenetic analysis

Species: Hamster  
Dose: 5 MMOL/L  
Cell Type: Embryo  
Mutation test: Morphological transformation.

Species: Hamster  
Dose: 40 MMOL/L  
Cell Type: Embryo  
Mutation test: Cytogenetic analysis

Species: Hamster  
Dose: 500 UMOL/L  
Cell Type: Embryo  
Mutation test: 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.
UN#: 3077
Class: 9
Packing Group: Packing Group III
Hazard Label: Class 9
PIH: Not PIH

IATA
Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: Xn
Indication of Danger: Harmful.
R: 22-31
Risk Statements: Harmful if swallowed. Contact with acids liberates toxic gas.
S: 25-46
Safety Statements: 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. If swallowed, seek medical advice immediately and show this container or label.
US Statements: Possible sensitizer.

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 2007 Sigma-Aldrich Co. License granted to make unlimited
paper copies for internal use only.