Section 01 - Chemical And Product And Company Information

Product Identifier ………………… Sodium Bisulphite 38%, Sodium Bisulphite Solution

Product Use ………………………….. Manufacturing of perfume, pharmaceuticals, photochemicals, bleaching agent, and papermaking

Supplier Name……………………….. ClearTech Industries Inc.
2302 Hanselman Avenue
Saskatoon, SK. Canada
S7L 5Z3

Prepared By……………………………. ClearTech Industries Inc. Technical Department
Phone: (306)664-2522

Preparation Date…………………….. June 29, 2010

24-Hour Emergency Phone………… 306-664-2522

Section 02 - Composition / Information on Ingredients

Hazardous Ingredients……………… Sodium Bisulphite 30-44%

CAS Number………………………….. Sodium Bisulphite 7631-90-5

Synonym (s)…………………………… Sodium hydrosulphite, sodium hydrogen sulphite

Section 03 - Hazard Identification

Inhalation…………………………… Product is irritating to nose, throat and respiratory tract.

Skin Contact / Absorption…………… Skin contact causes irritation with reddening, swelling, rash, scaling and/or blistering.
Eye Contact................................. Vapours from this product are irritating to the eyes. This product causes irritation, redness and pain. Corneal damage and conjunctivitis may result from eye contact with this product.

Ingestion........................................ May cause nausea, gastrointestinal upset, abdominal pain, central nervous system depression, vomiting, diarrhea, violent colic and death.

Exposure Limits.............................. ACGIH/TLV: 5mg/m³
NIOSH/REL: 5mg/m³
OSHA/PEL: 5mg/m³

Section 04 - First Aid Measures

Inhalation................................. Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.

Skin Contact / Absorption............... Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persist.

Eye Contact................................. Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention.

Ingestion........................................ Do not induce vomiting. If vomiting occurs, lean victim forward to prevent breathing in vomitus. Give two glasses of water. Do not give anything by mouth to an unconscious or convulsing person. Immediately call the local poison control center or hospital.

Additional Information.................... Not available

Section 05 - Fire Fighting

Conditions of Flammability.............. Non-flammable

Means of Extinction........................ For small fires use carbon dioxide or dry chemical. For large fires involving sodium bisulphite, flood fire area with water. Do not get the solid stream of water on spilled material.

Flash Point................................. Not applicable

Auto-ignition Temperature.............. Not applicable

Upper Flammable Limit.................... Not applicable
Lower Flammable Limit................. Not applicable

Hazardous Combustible Products... Heating causes thermal decomposition, which liberates toxic fumes of sulfur dioxide, and corrosive fumes of nitrogen oxide and nitric acid. Reaction with some metals produces hydrogen gas.

Special Fire Fighting Procedures..... Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

Explosion Hazards...................... Non-explosive

Section 06 - Accidental Release Measures

Leak / Spill............................... Wear appropriate personal protective equipment. Ventilate area. Stop or reduce leak if safe to do so. Prevent material from entering sewers.

For small spills, dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container.

For larger spills, remove all ignition sources. Prevent liquid from entering sewers or waterways and dike with inert material (sand, earth, etc.). Stop Collect into containers for reclamation or disposal only if container is suitable to withstand the material. Consider in situ neutralization and disposal.

Deactivating Materials................. Dilute solutions of the following: sodium hydroxide, sodium carbonate (soda ash), ammonium hydroxide, hydrated lime.

Section 07 - Handling and Storage

Handling Procedures.................... Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.

Storage Requirements.................. Store in corrosion-proof area away from incompatible substances. Store in tightly closed container, preferably the supplier container. Store in a cool, well ventilated location away from heat, sparks and flames. Storage tanks should be constructed from polyethylene, polypropylene, fiberglass-reinforced plastic (FRP), cross-linked polyethylene (XLPE), or 316 stainless steel to avoid corrosion problems. Tanks should be vented into an alkaline fume recovery system or scrubber. Storage tanks should be protected from water ingress, and maintained structurally in a safe and reliable condition. Store above freezing point. Ideal storage temperatures are between 20°C-27°C.
Section 08 - Personal Protection and Exposure Controls

Protective Equipment

Eyes
Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Respiratory
A NIOSH/MSHA approved air-purifying respirator equipped with acid gas/fume, dust, mist cartridges for concentrations up to 50mg/m$^3$ or 20ppm as sulfur dioxide. A powered air-purifying respirator with acid gas cartridges for up to 50ppm sulfur dioxide. A full-facepiece air-supplied respirator if concentrations are for up to and higher than 100ppm sulfur dioxide.

Gloves
Impervious gloves of chemically resistant material (rubber, neoprene, vinyl or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Clothing
Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Footwear
Impervious boots of chemically resistant material should be worn at all times.

Engineering Controls

Ventilation Requirements
Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other
Emergency shower and eyewash should be in close proximity.

Section 09 - Physical and Chemical Properties

Physical State
Liquid

Odor and Appearance
Clear yellow liquid. Pungent odour of sulfur dioxide

Odor Threshold
Not available

Specific Gravity (Water=1)
1.33

Vapor Pressure (mm Hg, 20°C)
78mm Hg @ 20°C

Vapor Density (Air=1)
Not available
Evaporation Rate.......................... Not available
Boiling Point............................... 104°C
Freeze/Melting Point...................... 6°C
pH............................................. 3.8-5.2
Water/Oil Distribution Coefficient..... Not available
Bulk Density............................... Not available
% Volatiles by Volume...................... Not available
Solubility in Water......................... Completely miscible
Molecular Formula......................... NaHSO\textsubscript{3}
Molecular Weight.......................... 60.86353

Section 10 - Stability and Reactivity

Stability........................................... Stable under normal conditions. Slowly evolves sulfur dioxide under ambient temperatures.

Incompatibility............................... Reacts with strong oxidizers, Lewis acids, and mineral acids. Decomposes with heat.

Hazardous Products of Decomposition.. Sulfur dioxide released upon heating.

Polymerization............................... Will not occur

Section 11 - Toxicological Information

Irritancy......................................... High irritancy

Sensitization................................. Not available

Chronic/Acute Effects..................... Breathing fumes may aggravate existing pulmonary disease such as asthma, emphysema, and bronchitis.

Synergistic Materials....................... Not available

Animal Toxicity Data..................... LD\textsubscript{50}(oral, rat): 2000mg/kg
Carcinogenicity

Not considered carcinogenic by NTP, IARC, ACGIH and OSHA.

Reproductive Toxicity

Not available

Teratogenicity

Not available

Mutagenicity

Not available

Section 12 - Ecological Information

Fish Toxicity

LC₅₀ (96 hrs, mosquito fish): 240ppm

Biodegradability

Not available

Environmental Effects

Harmful to aquatic life in low concentrations.

Section 13 - Disposal Consideration

Waste Disposal

Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transportation Information

TDG Classification

Class: 8
Group: III
PIN Number: UN 2693
Other: Secure containers (full and/or empty) with suitable hold down devices during shipment.

Section 15 - Regulatory Information

WHMIS Classification

D2, E

NOTE: THE PRODUCT LISTED ON THIS MSDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS MSDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

NSF Certification

Product is certified under NSF/ANSI Standard 60 for dechlorination and antioxidant at a maximum dosage of 50mg/L.
Section 16 - Other Information

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / MSDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Material Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service or technical service department.

ClearTech Industries Inc. - Locations

Corporate Head Office: 2302 Hanselman Avenue, Saskatoon, SK, S7L 5Z3
Phone: 306-664-2522
Fax: 306-665-6216
www.ClearTech.ca

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Postal Code</th>
<th>Phone Number</th>
<th>Fax Number</th>
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<tr>
<td>Richmond, B.C.</td>
<td>12431 Horseshoe Way</td>
<td>V7A 4X6</td>
<td>604-272-4000</td>
<td>604-272-4596</td>
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<tr>
<td>Calgary, AB.</td>
<td>5516E - 40th St. S.E.</td>
<td>T2C 2A1</td>
<td>403-279-1096</td>
<td>403-236-0989</td>
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<tr>
<td>Edmonton, AB.</td>
<td>11750 - 180th Street</td>
<td>T5S 1N7</td>
<td>780-452-6000</td>
<td>780-452-4600</td>
</tr>
<tr>
<td>Saskatoon, SK.</td>
<td>2302 Hanselman Avenue</td>
<td>S7L 5Z3</td>
<td>306-933-0177</td>
<td>306-933-3282</td>
</tr>
<tr>
<td>Regina, SK.</td>
<td>555 Henderson Drive</td>
<td>S42 5X2</td>
<td>306-721-7737</td>
<td>306-721-8611</td>
</tr>
<tr>
<td>Winnipeg, MB.</td>
<td>340 Saulteaux Crescent</td>
<td>R3J 3T2</td>
<td>204-987-9777</td>
<td>204-987-9770</td>
</tr>
<tr>
<td>Mississauga, ON.</td>
<td>7480 Bath Road</td>
<td>L4T 1L2</td>
<td>905-612-0566</td>
<td>905-612-0575</td>
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</tbody>
</table>

24 Hour Emergency Number - All Locations - 306-664-2522