



**Sodium Bisulfite, Solution**

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** Sodium Bisulfite Solution    **Formula:** NaHSO<sub>3</sub>    **Molecular Weight:** 104.06  
**Chemical Name:** Sodium Bisulfite    **Chemical Family:** Bisulfite, sodium salt  
**Synonyms:** Sodium Bisulphite, Aqueous Solution; Sodium Hydrogen Sulfite; Sodium disulfite; Sulfurous acid, monosodium salt; Sodium acid sulfite  
**Product Use:** For the manufacture of perfume, pharmaceuticals, photochemicals, bleaching agent, and papermaking.

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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Hazardous Ingredients</u>	<u>% by Wt.</u>	<u>CAS Number</u>
Sodium Bisulfite	35 - 44%	7631-90-5
 <u>Non-Hazardous Ingredients</u>		
Water	56 - 65%	7732-18-5

**3. HAZARD INFORMATION**

**EMERGENCY OVERVIEW:**

Δ **Danger!** Contains material, which causes damage to the following organs: mucous membranes, respiratory tract, skin, eye, lens or cornea. Incompatible with acids and oxidizers (acidification will liberate sulfur dioxide gas). Thermal decomposition products are corrosive and/or toxic and include oxides of sulfur.

Sodium Bisulfite is a clear, colorless to light yellow liquid with distinctive odor. Pungent odor of Sulfur Dioxide.

Hazardous Material Information System (U.S.A.)

Health	*	2
Fire Hazard		0
Reactivity		0
Personal Protection		C

National Fire Protection Association (U.S.A.)





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**3. HAZARD INFORMATION (continued)**

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**POTENTIAL HEALTH EFFECTS:**

	<b>ACGIH (TLV)(2003)</b>	<b>NIOSH REL (2001)</b>	<b>OSHA PEL (1989)</b>
Sodium Bisulfite	5 mg/m <sup>3</sup> (TWA)	5 mg/m <sup>3</sup> (TWA -10 hrs)	Δ 5 mg/m <sup>3</sup> (TWA)

**In contact with the skin:** Sodium Bisulfite may cause symptoms of skin irritation such as reddening, swelling, rash, scaling or blistering.

**In contact with the eyes:** Vapors from this product are irritating to the eyes. This product causes irritation, redness, and pain. May cause burns if left untreated.

**Inhaled:** Product is irritating to the nose, throat and respiratory tract.

**Ingested:** May cause allergic reaction in some asthmatics. Ingestion of large amounts may cause nausea, gastrointestinal upset and abdominal pain. May cause central nervous system(CNS) depression, nausea and vomiting, diarrhea, violent colic and death.

**Long Term Exposure:**

**Existing Medical Conditions Possibly Aggravated By Exposure:** Breathing of fumes may aggravate acute or chronic asthma and chronic pulmonary disease such as emphysema and bronchitis. May cause allergic reactions in sulfide sensitive individuals.

**Carcinogenicity Data:**

Sodium bisulfite is not classified by NTP (National Toxicology Program), not regulated as carcinogenic by OSHA (Occupational Safety and Health Administration), and has been evaluated by IARC (International Agency for Research on Cancer) as a Group 3 (are not classifiable as to their carcinogenicity to humans). ACGIH (American Conference of Governmental Industrial Hygienists) classifies it as an A4= Not classifiable as a human carcinogen.

**4. FIRST AID MEASURES**

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**Precaution:** Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

**Skin contact:** Flush skin with running water for a **minimum** of 20 minutes. Start flushing while removing contaminated clothing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY. Do not transport victim unless the recommended flushing period is completed or flushing can be continued during transport.

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**4. FIRST AID MEASURES (continued)**

For minor skin contact, avoid spreading material on unaffected skin. Discard heavily contaminated clothing and shoes in a manner which limits further exposure. Otherwise, wash clothing separately before reuse.

**Eye contact:** Immediately flush eyes with running water for a **minimum** of 20 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention **IMMEDIATELY**. Do not transport victim until the recommended flushing period is completed unless flushing can be continued during transport.

**Inhalation:** Move victim to fresh air. Give artificial respiration **ONLY** if breathing has stopped. Give Cardiopulmonary Resuscitation (CPR) if there is no breathing **AND** no pulse. Obtain medical attention **IMMEDIATELY**.

**Ingestion:** **DO NOT INDUCE VOMITING**. If victim is alert and not convulsing, rinse mouth and give ½ to 1 glass of water to dilute material. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. **IMMEDIATELY** contact local poison control centre. Vomiting may need to be induced but should be directed by a physician or a poison control centre. **IMMEDIATELY** transport victim to an emergency facility.

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**5. FIRE FIGHTING MEASURES**

**Flash Point (method):** Not applicable, product is non-flammable

**Autoignition Temperature:** Not combustible

**Flammability Limits in air(%):** UEL: Not applicable LEL: Not applicable

**Fire Extinguishing Media:** For small fires use dry chemical, carbon dioxide or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam or flood fire area with water. Do not get solid stream of water on spilled material.

**Special Fire Fighting Procedures:** Oxides of Sulfur may be present during a fire. Use self-contained breathing apparatus and full protective clothing are recommended. Gas tight suits are required in extreme (>1000 ppm) concentrations of Sulfur dioxide. Evacuate residents who are downwind of fire. Prevent unauthorized entry to fire area. Dike area to contain runoff and prevent contamination of water sources. Neutralize runoff with lime, soda ash or other suitable neutralizing agents (see Deactivating Chemicals, Section 6). Cool containers that are exposed to flame with streams of water until fire is out.

**Other Fire or Explosion Hazards:** Thermal decomposition products are toxic and include oxides of Sulfur. Sodium sulfide may be formed after dried solution residues are heated. This is an explosive hazard and strongly alkaline in contact with water.



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## 6. ACCIDENTAL RELEASE MEASURES

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**Steps to be taken in the event of a spill or leak:** Remove all ignition sources. Ventilate area. Use appropriate Personal Protection Equipment. Prevent liquid from entering sewers or waterways. Dike with inert material (sand, earth, etc.). Stop or reduce leak if safe to do so. Collect into containers for reclamation or disposal only if container is suitable to withstand the material. Consider insitu neutralization and disposal. Ensure adequate decontamination of tools and equipment following clean up. Comply with Federal, Provincial/State and local regulations on reporting releases.

**Deactivating Chemicals:** Alkali materials such as dilute sodium hydroxide, Lime, limestone, sodium carbonate (soda ash), sodium bicarbonate, dilute aqua ammonia. Sulfur dioxide may be released during neutralization.

**Waste Disposal Methods:** Dispose of waste material at an approved waste treatment/disposal facility, in accordance with applicable regulations. Do not dispose of waste with normal garbage or to sewer systems.

Note - Clean-up material may be a RCRA Hazardous Waste on disposal.

- Spills are subject to CERCLA reporting requirements: RQ = 5000 lbs (2270 kg)

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## 7. HANDLING AND STORAGE

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**Precautions:** Wear appropriate Personal Protection Equipment. Keep ignition sources away from Sodium Bisulfite storage, handling and transportation equipment. Keep containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. **Do not expose to strong acids as this will liberate sulfur dioxide gas.**

**Handling Procedures and Equipment:** Rubber lined carbon steel or certain stainless steel materials are suitable for use. Contact CHEMTRADE LOGISTICS for specific recommendations when handling Sodium Bisulfite.

**Storage Temperature:** Store above freezing point (Section 9). Ideal storage temperatures are between and 20 and 27 degrees Centigrade.

**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.

**Other Precautions:** On exposure to air the product will lose some sulfur dioxide and gradually oxidize to sulfate. Both acidification and heating accelerate the release of sulfur dioxide fumes.



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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Recommendations listed in this section indicate the type of equipment which will provide protection against over exposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

**Δ Engineering Controls:** Provide exhaust ventilation or other controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure the eyewash stations and safety showers are proximal to the workstation location.

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

**Skin Protection:** Impervious (i.e., neoprene, PVC, rubber) gloves, coveralls, boots and/or other acid resistant protective clothing.

**Eye Protection:** Tight-fitting chemical goggles and face shield.

**Other Personal Protective Equipment:** Where there is a danger of spilling or splashing, acid resistant aprons or suits should be worn. Trousers legs should be worn outside (not tucked in) rubber boots. Safety showers and eyewash fountains should be installed in storage and handling areas.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Liquid

**Appearance and Odour:** Clear, colourless to light yellow liquid with distinctive odour. Pungent odour of Sulfur dioxide.

**Odour Threshold:** No data

**Boiling Point:** 104°C (220°F)

**Melting/Freezing Point:** Approximately 6°C (43°F)

**Vapour Pressure:** 32 mmHg at 20°C, 78 mm Hg (10.4 kPa) at 37.7°C

**Specific Gravity at 25°C (77°F)** 1.33 for 38%

**Δ Vapour Density: (Air=1):** Highest known value is 0.62 (Air=1) (Water)

**Bulk Density:** Not applicable (see specific gravity)

**Evaporation Rate:** Not applicable

**Solubility:** Miscible in all proportions in water.

**pH:** 3.8 to 5.2



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## 10. STABILITY AND REACTIVITY

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**Stability:** Under Normal Conditions: On exposure to air the product will lose some sulfur dioxide and gradually oxidize to sulfate. Under Fire Conditions: Decomposes to form oxides of sulfur.

**Conditions to Avoid:** High temperatures, sparks, open flames and all other sources of ignition. Temperatures at or near boiling point causes evolution of Sulfur dioxide.

**Materials to Avoid:** Strong oxidizers, may cause strong exothermic reaction. Lewis or mineral acids (acidification will liberate sulfur dioxide gas).

**Hazardous Decomposition or Combustion Products:** Thermal decomposition products are toxic and include oxides of Sulfur.

**Hazardous Polymerization:** Will not occur

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## 11. TOXICOLOGICAL INFORMATION

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<u>Ingredient Name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Δ Sodium Bisulfite Solution	LD50	2000 mg/kg	Oral	Rat

**Carcinogenicity Data:** Sodium bisulfite is not classified by NTP (National Toxicology Program), not regulated as carcinogenic by OSHA (Occupational Safety and Health Administration), and has been evaluated by IARC (International Agency for Research on Cancer) as a Group 3 (are not classifiable as to their carcinogenicity to humans). ACGIH (American Conference of Governmental Industrial Hygienists) classifies it as an A4 = Not classifiable as a human carcinogen.

**Reproductive Effects:** Not available

**Mutagenicity Data:** Evidence of mutagenic activity in bacteria, microorganisms, and DNA.

**Teratogenicity Data:** Not available

**Synergistic Materials:** None known



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**12. ECOLOGICAL INFORMATION**

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<b>Ingredient Name</b>	<b>Species</b>	<b>Period</b>	<b>Result</b>
Sodium Bisulfite Solution	Mosquito fish. (LC50)	96 hour(s)	240 ppm

**Products of** : These products are sulfur oxides (SO<sub>2</sub>, SO<sub>3</sub>). Some metallic oxides.

**Toxicity of the Products**: The products of degradation are toxic.

**of Biodegradation**

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**13. DISPOSAL CONSIDERATIONS**

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- Responsibility for proper waste disposal is with the owner of the waste. Work with the appropriate regulatory bodies to ensure compliance with regulations.
- Consider the collection of residual Sodium Bisulfite into containers for reclamation or disposal only if the container is suitable to withstand the material.
- Consider insitu neutralization and disposal.
- Clean-up material may be a RCRA Hazardous Waste on disposal.
- Provincial/State or local regulations or restrictions are complex and may differ from Federal regulations.
- The information applies to the material as manufactured; processing, neutralizing, use or contamination may make the information inappropriate, inaccurate or incomplete.

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**14. TRANSPORT INFORMATION**

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**U.S. (Under DOT)**

**Shipping Name:** RQ, Bisulfites, aqueous solutions, n.o.s.

**Hazard Class or Division:** 8

**Product Identification No. (PIN):** UN 2693

**Packing Group:** III

Reportable Quantity (RQ) = 5000 lbs (2270kg)

**Canada (Under TC)**

**Shipping Name:** Bisulfite, aqueous solution, n.o.s. (sodium bisulfite)

**Classification(s):** 8

**Product Identification No. (PIN):** UN 2693

**Packing Group:** III

Δ ERG 154



**15. REGULATORY INFORMATION**

**U.S.A.**

**SARA Title III HAZARD CATEGORIES AND LISTS**

**Product Hazard Categories**

Acute (Immediate) Health: Yes  
 Chronic (Delayed) Health: No  
 Fire: No  
 Reactivity: No  
 Sudden Release of Pressure: No

**Lists**

Extremely Hazardous Substance n/a  
 (40 CFR 355, SARA Title III Section 302)  
 CERCLA Hazardous Substance Yes  
 (40 CFR 302.4)  
 Toxic Chemical Yes  
 (40 CFR 372.65, SARA Title III Section 313)

**Reportable Quantity (RQ) under U.S. EPA CERCLA:** RQ=5000 lb

**TSCA Inventory Status:** Reported/Included

**Right-To-Know:** Illinois, Massachusetts, New Jersey, Pennsylvania

**Δ California prop. 65:** No products were found.

**CANADA**

**Workplace Hazardous Materials Information System (WHMIS)**

**Δ WHMIS Classification(s):** Class D-2B Material causing other toxic effects (TOXIC)  
 Class E – Corrosive  
 CEPA DSL: All components listed.

**Δ WHMIS Health Effects Index:** Corrosive Material  
 Sensitizing Material

**WHMIS Ingredient Disclosure List:** Confirmed A; Meets criteria for disclosure at 1% or greater.

EINECS Number: 231-548-0



**16. OTHER INFORMATION**

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**Additional Information and References**

1. "CHEMINFO" through "CCINFOdisc", Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada, Aug 1999.
2. CHEMLIST, American Chemical Society, Nov 1999.
3. DOSE, Royal Society of Chemistry, Aug 1999
4. **HSDB-Hazardous Substances Data Bank** , through "CCINFO disc", Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada, (November, 1999).
5. RTECS- Registry of Toxic Effects of Chemical Substances, On-line search, Canadian Centre for Occupational Health and Safety RTECS database, Aug 1999.
6. Transportation of Dangerous Goods Act and Regulations, Canadian Centre for Occupational Health and Safety, Aug 1999.
7. Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, 1999.

**Revision Indicators:**

Δ in the left margin indicates a revision or addition of information since the previous issue.



**16. OTHER INFORMATION (continued)**

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**Legend:**

CAS #	- Chemical Abstracts Service Registry Number
CERCLA	- Comprehensive Environmental Response, Compensation, and Liability Act
CFR	- Code of Federal Regulations
DOT	- Department of Transportation
EPA	- Environmental Protection Agency
LC <sub>50</sub>	- The concentration of material in air expected to kill 50% of a group of test animals
LD <sub>50</sub>	- Lethal Dose expected to kill 50% of a group of test animals
LEL	- Lower Explosive Limit
MSHA	- Mine Safety and Health Administration
NIOSH	- National Institute for Occupational Safety and Health
PEL	- Permissible Exposure Limit
PVC	- Polyvinyl chloride
RCRA	- Resource Conservation and Recovery Act
SARA	- Superfund Amendments and Reauthorization Act of the U.S. EPA
STEL	- Short Term Exposure Limit
TC	- Transport Canada
TDG	- Transportation of Dangerous Goods Act/Regulations
TLV	- Threshold Limit Value
TSCA	- Toxic Substances Control Act
TWA	- Time-Weighted Average
UEL	- Upper Explosive Limit

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Prepared by Chemtrade Logistics 1-866-887-8805

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