



Material Safety Data Sheet

SODIUM THIOSULFATE

A. PRODUCT INFORMATION

TRADE NAME (PRODUCT IDENTIFIER): SODIUM THIOSULFATE, ANHYDROUS SODIUM THIOSULFATE, CRYSTAL		CLASSIFICATION & SYMBOL: <div style="text-align: center;"> </div> Class D2B	
CHEMICAL NAME AND/OR SYNONYM: Sodium Thiosulfate (Sodium thiosulfate pentahydrate)	FORMULA: $Na_2S_2O_3$ $Na_2S_2O_3 \cdot 5H_2O$	CAS NO: 7772-98-7 (anhydrous) 10102-17-7 (pentahydrate)	
PRODUCT USE: As an "antichlor" in bleaching paper, pulp; as fixer in photography; extraction of silver from ores; as mordant in dyeing; manufacturing leather.			
MANUFACTURER/IMPORTER: General Chemical Performance Products Ltd. 201 City Centre Drive Mississauga, Ontario L5B 3A3		SUPPLIER/DISTRIBUTOR: General Chemical Performance Products Ltd. 201 City Centre Drive Mississauga, Ontario L5B 3A3	
EMERGENCY TELEPHONE NO: 866-543-3896			

B. PREPARATION INFORMATION

PREPARED BY: General Chemical Corporation Product Safety Department 973-515-1840	PREVIOUS ISSUE DATE: 5/2001
CURRENT ISSUE DATE: 03-18-04	

C. TOXICOLOGICAL PROPERTIES

INHALATION: Inhalation of dust or mist may irritate respiratory tract. If heated to the point where sulfur dioxide gas is driven off, then this gas is highly irritating to the respiratory tract.	
INGESTION: May irritate gastrointestinal tract causing purging if large quantity ingested. Generally considered low toxicity.	
SKIN: Dust or mist may cause irritation from prolonged contact. Aqueous solutions may cause irritation from repeated or prolonged contact.	
EYES: Dust, mist or solutions may irritate or burn the eyes and cause temporary conjunctivitis.	
ACUTE TOXICITY: Low toxicity. Doses of 8 g/kg (oral, rat) were non-toxic.	EXPOSURE LIMITS: None established for product.
CHRONIC TOXICITY: Not available.	TLV: 5 mg/m ³ for SO ₂ STEL: 10 mg/m ³ for SO ₂
OTHER: Not available.	BIOLOGICAL EXPOSURE INDICES (BEI): Not available.

D. PHYSICAL DATA

MATERIAL IS AT NORMAL CONDITIONS: LIQUID <input type="checkbox"/> SOLID <input checked="" type="checkbox"/> GAS <input type="checkbox"/> <input type="checkbox"/> _____	APPEARANCE AND COLOR: White granules for anhydrous. Clear to white granules or crystals for hydrate.	ODOR THRESHOLD: Odorless.
BOILING POINT: Hydrate loses water @ 100C Anhydrous decomposes above 100C FREEZING POINT: transition @ 48C (MELTING POINT)	SPECIFIC GRAVITY: (H ₂ O = 1) Anhydrous 1.667 Hydrate 1.685	VAPOR DENSITY: (AIR =1) Not applicable.
SOLUBILITY IN WATER: 42% by wt. @ 0C (hydrate) 33% by wt. @ 0C (anhydrous)	pH 7.5% solution of anhydrous pH = 8.6 (approx.)	VAPOR PRESSURE: (MM Hg @ 20°C) Not applicable. (PSIG)
EVAPORATION RATE: (Ether = 1.0) Not applicable.	% VOLATILES BY VOLUME: (AT 20°C) Not applicable.	MOLECULAR WEIGHT: Anhydrous 158.11 Hydrate 248.18 COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available.

E. REACTIVITY DATA

STABILITY: UNSTABLE <input type="checkbox"/> STABLE <input checked="" type="checkbox"/>	CONDITIONS TO AVOID: High temperatures (above 100C); yield sulfur dioxide gas and hazardous residue.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers cause vigorous exothermic reactions. Acids release sulfur dioxide gas. Water-reactive materials such as sodium, cause strong exothermic reaction with the hydrate. A violent reaction occurs with sodium nitrite when water of crystallization has been driven off by heating.	
HAZARDOUS DECOMPOSITION PRODUCTS: Sulfur dioxide gas which is toxic, corrosive and an oxidizer, is driven off above 100C leaving a sodium sulfide residue which is flammable, a strong irritant to skin and tissue and is also incompatible with acids.	
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR <input checked="" type="checkbox"/> MAY OCCUR <input type="checkbox"/>	OTHER PRECAUTIONS: None known.

F. FIRE OR EXPLOSION HAZARD

CONDITIONS OF FLAMMABILITY: Heating above 100C yields a flammable residue sodium sulfide.	FLASH POINT: METHOD <u>Not applicable.</u>
HAZARDOUS COMBUSTION PRODUCTS: See Section E.	
UPPER FLAMMABLE LIMIT: Not applicable. LOWER FLAMMABLE LIMIT: Not applicable. AUTOIGNITION TEMPERATURE: Not applicable.	EXPLOSION HAZARDS: Not applicable.
SENSITIVITY TO MECHANICAL IMPACT: Not applicable	
SENSITIVITY TO STATIC DISCHARGE: Not available.	
FIRE EXTINGUISHING PROCEDURES: Wear self-contained, NIOSH-approved breathing apparatus and full protective clothing including face and eye protection. Use water spray to keep fire exposed containers (if waterproof) cool and to knock down fumes.	

G. HAZARDOUS INGREDIENTS (MIXTURES ONLY)

MATERIAL OR COMPONENT/C.A.S. #	CONCENTRATION	HAZARD DATA
Not applicable		

H. PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION:

For dusty or misty conditions wear a NIOSH-approved dust or mist respirator. If sulfur dioxide should be released wear a NIOSH-approved self-contained breathing apparatus or supplied-air respirator or alternate choice approved for this gas.

EYES AND FACE:

For dusty or misty exposure, wear chemical safety goggles and hard hat (or other head covering). Do not wear contact lenses. Eyes must be protected if dissolving this material in water.

HANDS, ARMS, AND BODY:

Wear full work clothing, including long sleeved shirt, trousers and cotton gloves for dry product handling. These should be exchanged for impervious ones for solutions or where contact is repeated.

STORAGE:

Store in a cool, dry area, away from acids or oxidizers.
Keep container closed when not in use.

NORMAL HANDLING:

Avoid contact with skin, eyes and clothing. Avoid breathing dust or mist. Use good personal hygiene and housekeeping.

ENGINEERING CONTROLS:

Provide local exhaust if dusty or misty conditions prevail or if there is release of sulfur dioxide gas. Keep incompatible materials out of hood, ducts, etc.
Provide eye-wash facilities convenient to areas of use or handling..

ENVIRONMENTAL:

DEGRADABILITY:

Not applicable.

AQUATIC TOXICITY:

24,000 mg/l / 96 hr. / mosquito fish / TL_m / turbid water @ 22-24C

SPILL OR LEAK (ALWAYS WEAR PERSONAL PROTECTIVE EQUIPMENT):

Promptly shovel or sweep up dry chemical with a minimum of dusting and place in empty container with cover. Cautiously spray residue with plenty of water to complete clean-up.

WASTE DISPOSAL:

Dispose of waste consistent with the requirements of local and/or provincial waste disposal authorities.

CANADIAN SHIPPING INFORMATION:

TDGA CLASS: Not applicable	PIN:	LABEL:
--------------------------------------	-------------	---------------

I. FIRST AID MEASURES

INHALATION:

Remove to fresh air. If short of breath, give oxygen, provided a qualified operator is available. If symptoms persist, get prompt medical attention.

INGESTION:

If conscious, promptly give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Get medical attention.

SKIN:

Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse.

EYES:

Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

J.

THIS MATERIAL SAFETY DATA SHEET IS OFFERED FOR YOUR INFORMATION, CONSIDERATION AND INVESTIGATION AS REQUIRED BY FEDERAL HAZARDOUS PRODUCTS ACT AND RELATED LEGISLATION. THE INFORMATION IS BELIEVED TO BE ACCURATE BUT GENERAL CHEMICAL CANADA LTD. PROVIDES NO WARRANTIES, EITHER EXPRESSED OR IMPLIED.

STI
STIA

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Sodium thiosulfate
HCI PRODUCT ID NUMBER: 02842
SYNONYMS: none
CHEMICAL FAMILY NAME: Inorganic, salt

NFPA HAZARD RATINGS (H-F-R): 1-0-0
HMIS HAZARD RATINGS (H-F-R): 1-0-0

DISTRIBUTOR: HCI U.S.A. DISTRIBUTION COMPANIES, INC.
TECHNICAL RESOURCE CENTER
6529 S. BROADWAY
ST. LOUIS, MO 63111
(314) 353-6500

IN CASE OF EMERGENCY CALL: CHEMTREC 1-800-424-9300

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	CAS No.	PERCENT
Sodium thiosulfate	007772-98-7	>99

Trace impurities and additional material names not listed above may also appear in the Regulatory Information Section (Section 15) towards the end of the MSDS. These materials may be listed for local "Right to Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

Caution!
Contact with the eyes and skin can cause irritation.
Harmful if inhaled.

Continued

POTENTIAL HEALTH EFFECTS

SKIN: Contact with the skin may cause irritation.

EYES: Contact with the eyes may cause irritation, tearing or burns.

INGESTION: Ingestion may cause gastrointestinal irritation, nausea, vomiti and diarrhea.

INHALATION: Inhalation may be irritating to respiratory tract.

Components found on one of the OSHA designated carcinogen lists are listed below.

INGREDIENT	NTP	IARC	OSHA
Sodium thiosulfate	N	N	N

This product does not contain any chemicals reportable under California Proposition 65.

4. FIRST AID MEASURES

SKIN CONTACT: Remove contaminated clothing and shoes.
Wash exposed areas with soap and water.
Call a physician if irritation persists.

EYE CONTACT: Flush eyes with water for at least 15 minutes.
Call a physician if irritation persists.

INGESTION: Give 2-3 (16 oz.) glasses of water.
Insert finger in back of throat to induce vomiting.
Do not give anything by mouth to an unconscious person.
Consult a physician.

INHALATION: Remove to fresh air.
If breathing has stopped, give artificial respiration.
Get medical attention.

Continued

□

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSIVE PROPERTIES

FLASHPOINT:	N/AP
FLASH POINT METHOD:	N/AP
LOWER FLAMMABILITY LIMIT(% IN AIR):	N/AP
UPPER FLAMMABILITY LIMIT(% IN AIR):	N/AP
AUTOIGNITION TEMPERATURE:	N/AP
FLAMMABILITY CLASSIFICATION:	N/AP

EXTING. MEDIA: This product is not flammable. Use extinguishing media for surrounding fire.

FIRE FIGHTING: Use NIOSH-approved self-contained breathing apparatus and com

protective clothing when fighting chemical fires.
Cool fire-exposed containers with water spray.
Use water spray to disperse vapors and to provide protection
persons attempting to stop leak.

FIRE HAZARDS: None known

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS: Contain spill and ventilate area. Sweep up and containerize disposal.

LARGE SPILLS: Contain spill and ventilate area. Permit only trained person wearing full protective equipment to enter the spill area. Contain the spill in a waste container or remove with a vacuum truck. Prevent spill from entering natural watercourses.

Wear complete protective clothing when cleaning up chemical spills.

Spills and releases may have to be reported to federal and/or local authorities. See the Regulatory Information section (section 15) regarding reporting requirements.

Continued

□

7. HANDLING AND STORAGE INFORMATION

HANDLING: Avoid contact with skin, eyes, and clothing.
Avoid breathing product dust.
Do not take internally.
Wash thoroughly after handling this material.

STORAGE: Keep container closed when not in use.
Store in a cool, dry place.
Protect against physical damage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

Special ventilation is not required under normal use. Use local exhaust ventilation where dust, mist, or spray may be generated.

PERSONAL PROTECTIVE EQUIPMENT

SKIN: Wear impervious gloves.

EYES: Wear chemical safety goggles.

RESPIRATORY: Use a NIOSH-approved respirator for dusts/mists when necessary.

OTHER: Emergency showers, eye-wash stations, and fire blankets should be accessible. Wear protective clothing.

EXPOSURE GUIDELINES

INGREDIENT	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA
Sodium thiosulfate	N/EST	N/EST	N/EST	N/EST

See 29 CFR 1910.1000 (D)(2) and ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" booklet (Appendix C) for the determination of exposure limits for mixtures. Consult an industrial hygienist or similar professional to confirm that the calculated exposure limits are appropriate.

Continued

D

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Crystals or granules
APPEARANCE:	Clear to white
ODOR:	Odorless
MOLECULAR WEIGHT:	158.11
SPECIFIC GRAVITY:	1.67
SOLUBILITY (IN WATER):	33 @ 0 C
BOILING POINT:	212 F 100 C
FREEZING POINT:	N/AV
MELTING POINT:	118.4 F 48 C
PRODUCT pH (@ 23 C):	8.6 (7.5% soln)
VAPOR PRESSURE:	N/AP
VAPOR DENSITY:	N/AP
EVAPORATION RATE (BUTYL ACETATE=1):	N/AP
% VOLATILES:	N/AP

10. STABILITY AND REACTIVITY INFORMATION

STABILITY: Stable

COND. TO AVOID: Extreme temperatures

INCOMPATIBILITY: Strong oxidizers
Acids
Water-reactive materials

DECOMPOSITION: Oxides of sulfur

POLYMERIZATION: Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE EFFECTS

LD50: 5200 mg/kg - intraperitoneal - mouse
LDLo: 4 gm/kg - subcutaneous - rabbit
LDLo: 6 gm/kg - subcutaneous - frog

Continued

□

DELAYED EFFECTS (CHRONIC AND SUBCHRONIC)

CARCINOGENICITY: No data available
MUTAGENICITY: No data available
EPIDEMIOLOGY: No data available
TERATOGENICITY: No data available
REPRODUCTIVITY: No data available
NEUROTOXICITY: No data available

12. ECOLOGICAL INFORMATION

Fish toxicity: 2000 ug/L 5 month(s) LETH (mortality) Spotfin shiner
(*Notropis spilopterus*)
Invertebrate toxicity: <520000 ug/L 48 month(s) LTCN (Immobilization)
Water flea (*Daphnia magna*)
Algal toxicity: 22000 ug/L 1-1.5 year(s) (Photosynthesis) Blue-green
algae (*Spirulina labyrinthiformis*)

13. DISPOSAL CONSIDERATIONS

RCRA WASTE: Yes
RCRA ID NUMBER: N/AP
VOC CONTENT (lbs/gal): N/AP

Discharge, treatment, or disposal may be subject to Federal, State, or Local laws. State and Local regulations and restrictions are complex and may differ from Federal disposal regulation.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA Classification and the proper disposal method.

Continued

□

14. TRANSPORTATION INFORMATION

DOT SHIPPING NAME: None

DOT HAZARD CLASS: None

DOT ID NUMBER: None

DOT PACKING GROUP: None

IMDG HAZARD CLASS: None

ICAO HAZARD CLASS: None

15. REGULATORY INFORMATION

CERCLA "REPORTABLE QUANTITY" (RQ): No RQ

Spills/releases resulting in the loss of this product at or above its RQ requires immediate notification to the National Response Center (1-800-424-8802) and to your Local Emergency Planning Committee.

TSCA

TSCA INVENTORY STATUS: Yes

SARA TITLE III

INGREDIENT

Sodium thiosulfate

SECTION 313

no

SECTION 302

no

SECTION 311/312 HAZARD CLASS: N/AP

WHMIS CLASSIFICATION (CANADA)

Not restricted

FOREIGN INVENTORY STATUS

No data available

ADDITIONAL REGULATORY INFORMATION

This product does not contain any chemicals reportable under California Proposition 65.

MASSACHUSETTS SUBSTANCE LIST:
Not listed

Continued

□

NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST:
Not listed

PENNSYLVANIA HAZARDOUS SUBSTANCE LIST:
Not listed

16. OTHER INFORMATION

CREATION DATE: 06/11/1997

REVISION DATE: 06/11/1997

The information herein is presented in good faith and is believed to be correct as of the date hereof. However, HCI makes no representation as to the completeness and accuracy thereof. Users must make their own determination as to the suitability of the product for their purposes prior to use.

No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature with respect to the product or to the information herein is made hereunder. HCI shall in no event be responsible for any damages of whatsoever nature directly or indirectly resulting from the publication, or use of, or reliance upon the information contained herein.

End of Document□