MATERIAL SAFETY DATA SHEET

Sodium Thiosulphate

Section 01 - Chemical And Product And Company Information

Product Identifier .......................... Sodium Thiosulphate

Product Use .............................. Bleaching agent, an ingredient in photographic fixer solutions, for extraction of silver from ores, as a mordant in dyeing and printing textiles, reducers in chrome dyeing, in leather manufacture and a reagent in analytical and organic chemistry. Antidote for cyanide poisoning.

Supplier Name ......................... ClearTech Industries Inc.
1500 Quebec Avenue
Saskatoon, SK. Canada
S7K 1V3

Prepared By .............................. ClearTech Industries Inc. Technical Department
Phone: 1 (800) 387-7503

24-Hour Emergency Phone .......... 1 (800) 387-7503

Section 02 - Composition / Information on Ingredients

Hazardous Ingredients ................. Sodium Thiosulphate >98%

CAS Number ............................ Sodium Thiosulphate 7772-98-7

Synonym (s) ........................... Sodium thiosulphate anhydrous, sodium hyposulphite, sodium thiosulphate crystal, thiosulphuric acid disodium salt, and disodium thiosulphate.
Section 03 - Hazard Identification

Inhalation........................................ Breathing product dust or mist may irritate respiratory tract.

Skin Contact / Absorption........... Dust or mist may cause irritation from prolonged contact. Aqueous solutions may cause irritations from repeated or prolonged contact.

Eye Contact................................. Dust, solutions, or mist may irritate or burn the eyes and cause temporary conjunctivitis.

Ingestion....................................... Relatively low in acute toxicity but may cause irritation of the gastrointestinal tract and purging if large quantity is ingested.

Exposure Limits......................... No OSHA/TWA or ACGIH/TLV established for sodium thiosulphate.

OSHA/TWA: 5ppm (SO₂)
ACGIH/TLV: 2ppm (SO₂)
ACGIH/STEL: 5ppm (SO₂)

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 medical attention if difficulties persist.

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

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

Ingestion....................................... If swallowed do not induce vomiting. If vomiting occurs, lean patient forward or place on left side with head down to maintain open airway and prevent aspiration. Do not give water to patient becoming unconscious. If conscious then rinse out mouth with water and slowly drink water.

Additional Information............... Physician to treat symptomatically.
Section 05 - Fire Fighting

Conditions of Flammability
Non-flammable. Heating above 100°C yields flammable residue, sodium sulphide.

Means of Extinction
Product does not burn. Where fire is involved, use any fire fighting agent appropriate for surrounding material; use water spray to cool fire-exposed surfaces.

Flash Point
Not Applicable

Auto-ignition Temperature
Not Applicable

Upper Flammable Limit
Not Applicable

Lower Flammable Limit
Not Applicable

Hazardous Combustible Products
If involved in a fire, toxic and irritating gases (sulphur dioxide gas: toxic, corrosive, and an oxidizer) and residue (flammable sodium sulphide residue) may evolve.

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

Explosion Hazards
Not Available

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. Cautiously spray residue with plenty of water.

Deactivating Materials
Not Available

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 cool, dry, well-ventilated place. Keep container tightly closed, and away from incompatible materials.
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: If use creates dust formations, then a NIOSH-approved respirator with a dust cartridge is recommended. If sulphur dioxide is evolved, a self-contained breathing apparatus should be used.

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

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

Footwear: No special footwear is required other than what is mandated at place of work.

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: Solid

Odor and Appearance: No odor; clear to white granules or crystals.

Odor Threshold: Not Applicable

Specific Gravity (Water=1): 1.667

Vapor Pressure (mm Hg, 20C): Not Applicable

Vapor Density (Air=1): Not Applicable

Evaporation Rate: Not Applicable

Boiling Point: Decomposes at temperatures >100°C
Freeze/Melting Point .................................. Approximately 48°C

pH ....................................................... 7.8

Water/Oil Distribution Coefficient .... Not Applicable

Bulk Density ....................................... Not Available

% Volatiles by Volume ......................... Not Applicable

Solubility in Water .............................. 33% at 0°C, soluble in water

Molecular Formula .................... Na₂S₂O₃

Molecular Weight ......................... 158.11

Section 10 - Stability and Reactivity

Stability .............................................. Stable under normal conditions. Avoid temperatures 100°C or greater.

Incompatibility ................................. Incompatible with strong oxidizers, acids and water reactive materials.

Hazardous Products of Decomposition .. Oxides of sulphur and hydrogen sulphide

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

Section 11 - Toxicological Information

Irritancy ............................................ Irritant to skin and eye after repeated or prolonged contact.

Sensitization ..................................... Not Available

Chronic/Acute Effects ....................... No unusual toxicity reported

Synergistic Materials ......................... Not Available

Animal Toxicity Data ....................... LD₅₀(oral, rat): >5000 mg/kg

Carcinogenicity ............................... Not known to be a carcinogenic.

Reproductive Toxicity ...................... Not Available
Teratogenicity ........................................ Not Available
Mutagenicity ........................................ Not Available

### Section 12 - Ecological Information

**Fish Toxicity** ........................................ Not Available

**Biodegradability** ........................................ Not Available

**Environmental Effects** .............................. May be harmful to aquatic organisms.

### 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** ........................................ Not Regulated
- **Group** ........................................ Not Regulated
- **PIN Number** ........................................ Not Regulated

**Other** ........................................ Secure containers (full and/or empty) with suitable hold down devises during shipment.

### Section 15 - Regulatory Information

**WHMIS Classification** .............................. D2

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.
Section 16 - Other Information

Preparation Date........................................ March 23, 2011
Revision Date........................................... January 31, 2015
March 18, 2015

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: 1500 Quebec Avenue, Saskatoon, SK, S7K 1V3
Phone: 306-664-2522
Fax: 306-665-6216
www.ClearTech.ca

<table>
<thead>
<tr>
<th>Location</th>
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<th>Postal Code</th>
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<tbody>
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24 Hour Emergency Number - All Locations – 1 (800) 387-7503