Safety Data Sheet

Material Name: Sodium Thiosulfate Anhydrous ID: CL-217

* * * Section 1 - Chemical Product and Company Identification * * *

Chemical Name: Sodium Thiosulfate Anhydrous
Product Use: For Commercial Use

RESTRICTIONS on USE

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Houston, Texas 77041-1104

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Fax: (713) 896-7540
Emergency # (800) 424-9300 or +1 (703) 527-3887

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

* * * Section 2 - - Hazards Identification * * *

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Classification of the substance or mixture: Not a hazardous substance or mixture.

Label elements, including precautionary statements: Not a hazardous substance or mixture.

Hazards not otherwise classified (HNOC) or not covered by GHS: WARNING! MAY CAUSE EYE AND SKIN IRRITATION. RELEASES TOXIC, IRRITATING GAS AT HIGH TEMPERATURES (100 deg. C). MAY CAUSE ALLERGIC SKIN REACTIONS.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
7772-98-7	Sodium Thiosulfate Anhydrous	> 90

Synonyms: Chlorine control, Declor-it, Disodium thiosulfate, S-hydril, Sodium hyposulfite, Sodium oxide sulfide, Antichlor, Sodothiol, Sulfothiorine, Ametox

* * * Section 4 - First Aid Measures * * *

Emergency Overview

Sodium Thiosulfate Anhydrous is a colorless solid found in crystalline or powder forms. Product may irritate the eyes, skin, and mucous membranes of the upper respiratory tract. Keep material away from sodium nitrite and metal nitrates. Product is not combustible. Use extinguishing media appropriate for surrounding fire. Thermal decomposition of this product produces irritating vapors and toxic gases (e.g. sulfur oxides and sodium oxides). At 100 degrees C, highly irritating sulfur dioxide gas is given off. Sulfur dioxide is toxic, corrosive, flammable, and a strong oxidizer. Emergency responders should wear proper personal protective equipment for the releases to which they are responding.

Hazard Statements

WARNING! MAY CAUSE EYE AND SKIN IRRITATION. RELEASES TOXIC, IRRITATING GAS AT HIGH TEMPERATURES (100 deg. C). MAY CAUSE ALLERGIC SKIN REACTIONS. Avoid contact with eyes and skin. Avoid breathing dusts. Avoid exposure of material to high temperatures. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation.

Potential Health Effects: Eyes

Exposure to particulates or solution of this product may irritate the eyes and cause stinging, tearing, redness and pain.

Potential Health Effects: Skin

This product can irritate the skin, especially after prolonged exposures. Repeated skin contact may cause dermatitis (red, cracked skin). In sensitive individuals, exposure to this product can cause allergic reaction.

Potential Health Effects: Ingestion

Ingestion of this product (especially in large volumes) can irritate the tissues of the mouth, esophagus, and other tissues of the digestive system. Symptoms of exposure can include vomiting, diarrhea, nausea, and systemic effects of cyanosis. Large doses by ingestion can also have a cathartic action, causing diarrhea.

Potential Health Effects: Inhalation

Breathing dusts or particulates generated by this product can irritate the nose, throat or respiratory system. Symptoms of such exposure could include coughing, sneezing, and chest discomfort. Inhalation of vapors and fumes given off when Sodium Thiosulfate Anhydrous is heated above 100 degrees C, (sulfur oxides and sodium oxides) will cause significant irritation.

First Aid: Eyes

Immediately rinse affected eye with plenty of water for at least 20 minutes. Seek immediate medical attention if any adverse effect occurs after rinsing.

First Aid: Skin

Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Seek immediate medical attention if irritation develops or persists.

First Aid: Ingestion

DO NOT INDUCE VOMITING, unless directed by medical personnel. Have victim rinse mouth thoroughly with water, if conscious. Never give anything by mouth to a victim who is unconscious or having convulsions. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Contact a physician or poison control center immediately.

First Aid: Inhalation

Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

Heating this product above 100 degrees C will release hazardous sulfur dioxide gas. Explosion hazard with sodium nitrite and metal nitrites.

Hazardous Combustion Products

Sulfur dioxide gas.

Extinguishing Media

Use methods for the surrounding fire and other materials involved in the fire.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self-contained breathing apparatus. If possible control runoff from fire control or dilution water to prevent environmental contamination.

NFPA Ratings: Health: 2 **Fire:** 0 **Instability:** 0 **Other:** None.

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

* * * Section 6 - Accidental Release Measures * * *

Containment Procedures

Stop the flow of material, if this can be done without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product (see Section 10 for incompatibility information).

Clean-Up Procedures

Small releases can be cleaned-up wearing gloves, goggles and suitable body protection. In case of a large spill (in which excessive dusts can be generated), clear the affected area, protect people, and respond with trained personnel. Do not allow the spilled product to enter public drainage system or open water courses. Place all spill residues in an appropriate container and seal. Thoroughly wash the area after a spill or leak clean-up. Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

Evacuation Procedures

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. In case of large spills, follow all facility emergency response procedures.

Special Procedures

Remove soiled clothing and launder before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available.

* * * Section 7 - Handling and Storage * * *

Handling Procedures

All employees who handle this material should be trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Avoid accumulation of dusts of this product. Use this product only with adequate ventilation. Wash thoroughly after handling.

Storage Procedures

Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of corrosion- and fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers). Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Do not cut, grind, weld, or drill near this container. Never store food, feed, or drinking water in containers that held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored.

* * * Section 8 - Exposure Controls / Personal Protection * * *

A: General Product Information

Sulfur dioxide, which may be released at high temperatures, has an OSHA established exposure limit of 2 ppm TWA and 5 ppm STEL (15 minutes). NIOSH has recommended an exposure limit of 2 ppm TWA and has established a level of 100 ppm as Immediately Dangerous to Life and Health (IDLH).

B: Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

The exposure limits given are for Particulates Not Otherwise Classified.

OSHA: 15 mg/m^3 TWA (Total dust)
5 mg/m^3 TWA (Respirable fraction)
DFG MAKs 4 mg/m^3 TWA (Inhalable fraction)
1.5 mg/m^3 TWA (Respirable fraction)

Engineering Controls

Use mechanical ventilation such as dilution and local exhaust. Use a corrosion-resistant ventilation system and exhaust directly to the outside. Supply ample air replacement.

PERSONAL PROTECTIVE EQUIPMENT

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132). Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

Wear safety glasses (or goggles). . If necessary, refer to U.S. OSHA 29 CFR 1910.133.

Personal Protective Equipment: Skin

Wear impervious gloves, boots and coveralls to avoid skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138.

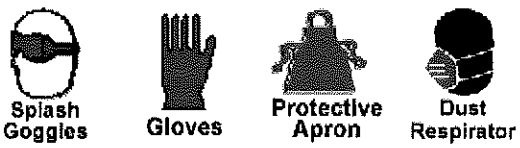
Personal Protective Equipment: Respiratory

No specific guidelines are available. If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. An approved dust and mist air-purifying respirator may be adequate. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

Personal Protective Equipment: General

Wash hands thoroughly after handling material. Do not eat, drink or smoke in work areas. Have a safety shower or eye-wash fountain available.

Protective Clothing Pictograms:



* * * Section 9 - Physical & Chemical Properties * * *

Physical Properties: Additional Information

The data provided in this section are to be used for product safety handling purposes. Please refer to Product Data Sheets, Certificates of Conformity or Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

Appearance:	White crystalline or powder	**Odor:**	Odorless
Physical State:	Solid	**pH:**	6.0-8.5 (5% solution)
Vapor Pressure:	Zero	**Vapor Density:**	Not applicable
Boiling Point:	212 deg F (100 deg C)	**Freezing/Melting Point:**	118 deg F (48 deg C)
Solubility (H2O):	50 g/100 mL @ 20 deg C	**Specific Gravity:**	1.667 (H2O = 1)
Softening Point:	Not applicable	**Particle Size:**	Not determined
Molecular Weight:	158.13	**Bulk Density:**	Not available
Chemical Formula:	Na2O3S2	**Flash Point:**	Not flammable
Method Used:	Not applicable	**Lower Flammable Limit (LEL):**	Not applicable
Upper Flammable Limit (UEL):	Not applicable	**Auto Ignition:**	Not applicable
		Rate of Burning:	Not applicable
		Flammability Classification	Not applicable

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

Product is normally stable in solid form. May be unstable in solution. Sodium Thiosulfate Anhydrous is hygroscopic; on exposure to air it will absorb water.

Chemical Stability: Conditions to Avoid

Avoid high temperatures, exposure to air, moisture and incompatible materials.

Incompatibility

This material is incompatible with strong oxidizers and acids. Sodium Thiosulfate Anhydrous can react violently with Sodium Nitrite. Sodium Thiosulfate Anhydrous is also incompatible with mercury and iodine.

Hazardous Decomposition

Sulfur oxides and sodium oxides and hydrogen sulfide.

Hazardous Polymerization

Will not occur.

* * * Section 11 - Toxicological Information * * *

Acute and Chronic Toxicity

A: General Product Information

Poisonous by intravenous route. Mildly toxic by ingestion. Human systemic effects by ingestion, including cyanosis. Chronic: Long term skin overexposure to this product may cause dermatitis (red, itchy skin).

B: Product Analysis - LD50/LC50

LD (intravenous, rat) > 2500 mg/kg; Behavioral: convulsions or effect on seizure threshold; LD_{50} (intraperitoneal, mouse) = 5200 mg/kg

C: Product Analysis - TDLo/LDLo;

LDLo (subcutaneous, rabbit) = 4 g/kg; LDLo (subcutaneous, frog) = 6 g/kg; TDLo (unreported, mouse) = 800 mg/kg; Immunological Including Allergic: decreased immune response; TDLo (unreported, rat) = 800 mg/kg; Immunological Including Allergic: decrease in cellular immune response, decrease in humoral immune response

Crcinogenicity:

A: General Product Information

Sodium Thiosulfate Anhydrous is not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

* * * Section 11 - Toxicological Information Continued * * *

B: Product Carcinogenicity
No information available.

Epidemiology
Prolonged skin contact may cause allergic skin reactions (allergic dermatitis).

Neurotoxicity
No information available.

Mutagenicity
No information available.

Teratogenicity
No information available.

Other Toxicological Information
Thiosulfate occurs naturally in the body.

* * * Section 12 - Ecological Information * * *

Ecotoxicity
This compound may be harmful to aquatic life in high concentrations.

Environmental Fate
No potential for food chain concentration.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

A: General Product Information
As shipped, this product is not considered a hazardous waste.

B: Product Waste Numbers
No EPA Waste Numbers are applicable for this product.

Disposal Instructions
All wastes must be handled in accordance with local, state and federal regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

* * * Section 14 - Transportation Information * * *

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information
Shipping Name: Not applicable.
Hazard Class: Not applicable
UN/NA #: Not applicable
Packing Group: Not applicable
Required Label(s): Not applicable
RQ Quantity: Not applicable

56th Edition International Air Transport Association (IATA):
For Shipments by Air transport: Not considered hazardous.

International Maritime Organization (I.M.O.) Classification

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

Sodium Thiosulfate Anhydrous is not listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

CERCLA: Final RQ = Not Applicable

SARA 302 (EHS TPQ): There are no specific Threshold Planning Quantities for Sodium Thiosulfate Anhydrous.. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb. (4,540 kg) therefore applies, per 40 CFR 370.20.

B: Sara 311/312 Tier II Hazard Ratings:

Component	CAS #	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Sodium Thiosulfate Anhydrous	7772-98-7	No	No	No	Yes	Yes

State Regulations

A: General Product Information

This product is not listed on the state lists from CA, FL, MA, MN, NJ, or PA.

Component	CAS #	CA	FL	MA	MN	NJ	PA
Sodium Thiosulfate Anhydrous	7772-98-7	No	No	No	No	No	No

Other Regulations

A: General Product Information

Not determined.

B: Product Analysis - Inventory

Product	CAS #	TSCA	DSL	EINECS
Sodium Thiosulfate Anhydrous	7772-98-7	Yes	Yes	Yes

C: Product Information (Canada)

This product is not listed in the WHMIS Ingredient Disclosure List (IDL):

Product	CAS #	Minimum Concentration
Sodium Thiosulfate Anhydrous	7772-98-7	No disclosure limit

Canadian WHMIS Classification: D2B

ANSI LABELING (Z129.1):

CAUTION! MAY CAUSE SKIN AND EYE IRRITATION. HARMFUL IF INGESTED OR INHALED. MAY CAUSE ALLERGIC REACTION IN SENSITIVE INDIVIDUALS. Avoid contact with skin, eyes, or clothing. Do not taste or swallow. Avoid breathing dusts and particulates. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, faceshields, suitable body protection, and NIOSH-approved respiratory protection, as appropriate. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, dry chemical, CO_2, or "alcohol" foam. **IN CASE OF SPILL:** Absorb spill with inert material. Place residue in suitable container. Consult Material Safety Data Sheet for additional information.

* * * Section 16 - Other Information * * *

Other Information

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Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

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Revision Log

08/31/04 10:14 AM AMC New MSDS
06/22/05 1:47 pm SEP Update IATA Section 14
10/22/07 4:32 PM SEP Updated IATA Section 14
10/15/08 9:48 AM DLY Changed Chem One Physical Address, Section 1
12/27/2010 2:50 PM SEP Updated IATA
02/09/2015 GHS Revision all sections
This is the end of SDS # CL-217

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