Material Safety Data Sheet
Sodium sulfide nonahydrate

ACC# 21640

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium sulfide nonahydrate
Catalog Numbers: AC196810000, AC196815000, AC387065000, AC424420250, AC424425000, S80194, S80194-1, S425-212, S425-500
Synonyms: None.
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
1313-84-4	Sodium sulfide nonahydrate	98	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless to slight yellow solid.
Danger! Causes burns by all exposure routes. Decomposed even by weak acids, evolving hydrogen sulfide, H2S, a flammable, poisonous gas with the odor of rotten eggs. Contact with acids liberates toxic gas. May cause central nervous system effects. Prolonged exposure may cause pulmonary edema. May cause cardiac disturbances. Air sensitive. Light sensitive. Very toxic to aquatic organisms. Hygroscopic (absorbs moisture from the air).
Target Organs: Central nervous system, respiratory system, cardiovascular system, eyes, skin.

Potential Health Effects
Eye: Causes eye burns. May cause irreversible eye injury. May cause blindness. May cause chemical conjunctivitis and corneal damage.
Skin: Causes skin burns. Prolonged and/or repeated contact may cause irritation and/or dermatitis. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.
Ingestion: May cause severe and permanent damage to the digestive tract. May cause perforation of the digestive tract. May cause cardiac disturbances. Causes severe pain, nausea, vomiting, diarrhea, and shock. Causes digestive tract burns with immediate pain, swelling of the throat, convulsions, and possible coma. May cause systemic effects. May cause dizziness, drowsiness, confusion, weakness, irregular breathing, and unconsciousness. Contact with stomach acids can liberate toxic hydrogen sulfide
Inhalation: Irritation may lead to chemical pneumonitis and pulmonary edema. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. May cause effects similar to those described for ingestion. Aspiration may lead to pulmonary edema. May cause systemic effects.
Chronic: Effects may be delayed.

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Dusts may be combustible when exposed to heat, flame, or oxidizing agents. This material does not have a flashpoint. It can burn but does not ignite readily. Fire may produce highly irritating or toxic gases (sulfur dioxide and hydrogen sulfide).
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.
Flash Point: Not available.
Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 1; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Remove all sources of ignition. Flush spill area with water. Provide ventilation. Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Wash hands before eating. Use only in a well-ventilated area. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. Discard contaminated shoes.
Storage: Keep away from heat, sparks, and flame. Keep container closed when not in use. Keep from contact with oxidizing materials. Keep away from strong acids. Corrosives area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium sulfide nonahydrate	none listed	none listed	none listed
Sodium sulfide	none listed	none listed	none listed

OSHA Vacated PELs: Sodium sulfide nonahydrate: No OSHA Vacated PELs are listed for this chemical. Sodium sulfide: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: colorless to slight yellow
Odor: rotten egg-like
pH: alkaline in solution
Vapor Pressure: Not applicable.
Vapor Density: Not available.
Evaporation Rate: Not applicable.
Viscosity: Not applicable.
Boiling Point: 920 deg C
Freezing/Melting Point:50 deg C
Decomposition Temperature: Not available.
Solubility: 47.5% @ 10C
Specific Gravity/Density:1.427 @ 16C
Molecular Formula: Na2S.9H2O
Molecular Weight:240.1602

Section 10 - Stability and Reactivity

Chemical Stability: Air sensitive. Light sensitive. Hygroscopic: absorbs moisture or water from the air. Moderately stable. Aqueous solutions and moist solid slowly give off Hydrogen sulfide gas; more Hydrogen sulfide is given off it heated. Aqueous solutions are slowly oxidized on exposure to air. Discolours on exposure to light and air.
Conditions to Avoid: Light, moisture, exposure to air, acids.
Incompatibilities with Other Materials: Acids-reaction releases highly toxic and flammable Hydrogen sulfide. Oxidizing agents-Can react violently and form highly irritating Sulfur dioxide. Diazonium salts react explosively. N,N-Dichloromethyl amine reacts explosively. Carbon releases heat.
Hazardous Decomposition Products: Oxides of sulfur, hydrogen sulfide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 1313-84-4: WE1925000
CAS# 1313-82-2: WE1905000
LD50/LC50:
Not available.

CAS# 1313-82-2:
Oral, mouse: LD50 = 205 mg/kg;
Oral, rat: LD50 = 208 mg/kg;
.

Carcinogenicity:
CAS# 1313-84-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 1313-82-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: No information found
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	SODIUM SULFIDE, HYDRATED	SODIUM SULFIDE HYDRATED
Hazard Class:	8	8
UN Number:	UN1849	UN1849
Packing Group:	II	II
Additional Info:		LOAD SEPARATE FROM ACIDS

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 1313-84-4 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).
CAS# 1313-82-2 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 1313-84-4: immediate, reactive.
CAS # 1313-82-2: immediate, reactive.
Section 313 No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 1313-84-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 1313-82-2 can be found on the following state right to know lists: New Jersey, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

C N

Risk Phrases:

R 31 Contact with acids liberates toxic gas.
R 34 Causes burns.
R 50 Very toxic to aquatic organisms.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 1313-84-4: 2
CAS# 1313-82-2: 2

Canada - DSL/NDSL

CAS# 1313-82-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of E, D1B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 6/30/1999
Revision #8 Date: 8/12/2005