

Tessengerlo Kerley

THIO-SUL(R)

Ammonium thiosulfate solution

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT NAME: THIO-SUL(R)
 CHEMICAL FAMILY: Inorganic salt solution
 SYNONYMS: Ammonium thiosulfate, ATS, 12-0-0-26S,
 Thiosulfuric acid (H2S2O3), diammonium salt
 FORMULA: (NH4)2S2O3
 1.2 MANUFACTURER: TESSENDERLO KERLEY INC.
 2255 N. 44TH STREET, SUITE 300
 PHOENIX, ARIZONA 85008-3279
 INFORMATION: (602) 889-8300
 1.3 EMERGENCY CONTACT: (800) 877-1737 (Tessengerlo Kerley)
 (800) 424-9300 (CHEMTREC)

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

2.1 CHEMICAL INGREDIENTS (% by wt.):
 Ammonium thiosulfate CAS #: 7783-18-8 55-60%
 Ammonium sulfate CAS #: 7783-20-2 0-4%
 Ammonium sulfite(s) CAS #: 0.5-2.5%
 Water CAS #: 7732-18-5 36-45%
 (See Section 8 for exposure guidelines)

SECTION 3: HAZARDS IDENTIFICATION

NFPA:
 HEALTH: 1
 FLAMMABILITY: 0
 REACTIVITY: 0
 EMERGENCY OVERVIEW: Contact may cause eye irritation.
 Repeated/prolonged skin contact may cause irritation.
 Ingestion may irritate gastrointestinal tract. Heating
 may cause ammonia gas to evolve.
 3.1 POTENTIAL HEALTH EFFECTS:
 EYE: Contact with the eyes by product mist or solution
 may cause irritation or a burning sensation.
 SKIN CONTACT: Prolonged or repeated contact with
 product mist or solution may cause skin irritation.
 SKIN ABSORPTION: Absorption is unlikely to occur.
 INGESTION: Ingestion of product solution may cause
 irritation of the gastrointestinal tract to include
 nausea, vomiting and diarrhea. Ammonium thiosulfate
 is considered to have a low toxicity to humans.
 INHALATION: Inhalation of product mist may cause
 irritation of the nose, throat and respiratory tract.
 CHRONIC EFFECTS/CARCINOGENICITY: Not listed as a
 carcinogen by NTP, IARC or OSHA.

SECTION 4: FIRST AID MEASURES

4.1 EYES: Immediately flush with large quantities of water
 for 15 minutes. Hold eyelids apart during irrigation
 to insure thorough flushing of the entire area of the
 eye and lids. Obtain medical attention if irritation
 occurs.
 4.2 SKIN: Immediately flush with large quantities of water.
 Remove contaminated clothing under a safety shower.
 Obtain medical attention if irritation occurs.
 4.3 INGESTION: If victim is conscious, give 2 to 4 glasses
 of water and induce vomiting by touching finger to
 back of throat. Obtain medical attention.
 4.4 INHALATION: Remove victim from contaminated atmosphere.
 If breathing is labored, administer oxygen. If
 breathing has ceased, clear airway and start mouth to
 mouth resuscitation. If heart has stopped beating,
 external heart massage should be applied. Obtain
 medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES:
 FLASH POINT: Not flammable
 METHOD USED: NA
 5.2 FLAMMABLE LIMITS:
 LFL: NA
 UFL: NA
 5.3 EXTINGUISHING MEDIA: As appropriate for combustibles
 involved in fire.
 5.4 FIRE & EXPLOSIVE HAZARDS: Heating to dryness may cause
 the release of ammonia, ammonium sulfate, sulfur and
 oxides of sulfur. NH3 (16-25%) may form flammable
 mixtures with air.
 Keep containers/storage vessels in fire area cooled
 with water spray. Heating may cause the release of
 ammonia vapors.
 5.5 FIRE FIGHTING EQUIPMENT: As in any fire, wear self-
 contained breathing apparatus, pressure demand,
 MSHA/NIOSH (approved or equivalent) and full
 protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 SMALL RELEASES: Confine and absorb small releases on
 sand earth or other inert absorbent. Use water spray
 to dilute to weak fertilizer solution.
 6.2 LARGE RELEASES: Confine area to qualified personnel.
 Shut off release if safe to do so. Dike spill area to
 prevent runoff into sewers, drains or surface
 waterways (potential aquatic toxicity). Recover as
 much of the solution as possible. Treat remaining
 material as a small release (above).

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING: Avoid contact with eyes. Use only in a well
 ventilated area. Wash thoroughly after handling.
 Avoid prolonged or repeated breathing of vapors.
 Avoid prolonged or repeated contact with the skin.
 7.2 STORAGE: Store in well ventilated areas. Do not store
 combustibles in the area of storage vessels. Keep
 away from any sources of heat or flame. Store tote
 and smaller containers out of direct sunlight at
 moderate temperatures. (See Section 10.4 for
 materials of construction)

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

8.1 RESPIRATORY PROTECTION: None generally required. If
 conditions exist where mist may be generated, a
 NIOSH/MSHA approved mist respirator should be worn.
 8.2 SKIN PROTECTION: Neoprene rubber gloves and apron
 should be worn to prevent repeated or prolonged
 contact with the liquid. Wash contaminated clothing
 prior to reuse.
 8.3 EYE PROTECTION: Chemical goggles and a full face
 shield. DO NOT WEAR CONTACT LENSES.
 8.4 EXPOSURE GUIDELINES:

	OSHA		ACGIH	
	TWA	STEL	TLV	STEL
None	NA	NA	NA	NA

 8.5 ENGINEERING CONTROLS: Use adequate exhaust ventilation
 to prevent inhalation of product vapors.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE: Colorless to pale yellow liquid.
9.2 ODOR: May have a slight ammonia and/or organic odor.
9.3 BOILING POINT: 210 deg F (98.9 deg C) - 220 deg F
(104.4 deg C)
9.4 VAPOR PRESSURE: 18 mm Hg @ 70 deg F (21.1 deg C)
9.5 VAPOR DENSITY: Not determined
9.6 SOLUBILITY IN WATER: Complete
9.7 SPECIFIC GRAVITY: 1.32 - 1.35 (11.0 - 11.2 lbs/gal)
9.8 FREEZING POINT: Approx. 34 deg F (1.1 deg C)
9.9 pH: 7.0 - 8.5
9.10 VOLATILE: Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1 STABILITY: This is a stable material
10.2 HAZARDOUS POLYMERIZATION: Will not occur
10.3 HAZARDOUS DECOMPOSITION PRODUCTS: Heating this product will evolve ammonia. Heating to dryness will cause the production of ammonia, ammonium sulfate, sulfur and oxides of sulfur. Ammonia (16-25%) may form flammable mixtures with air.
10.4 INCOMPATIBILITY: Strong OXIDIZERS such as nitrates, nitrites or chlorates can cause explosive mixtures if heated to dryness. ACIDS will cause the release of sulfur dioxide, a severe respiratory hazard. ALKALIES will accelerate the evolution of ammonia. AMMONIUM THIOSULFATE SOLUTION IS NOT COMPATIBLE WITH COPPER, ZINC OR THEIR ALLOYS (i.e. bronze, brass, galvanized metals, etc.). These materials of construction should not be used in handling systems or storage containers for this product. (SEE Section 7.2, Storage)

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 ORAL:
ORAL-RAT LD50: 2,890 mg/Kg
11.2 DERMAL: Data not available
11.3 INHALATION: Data not available
11.4 CHRONIC/CARCINOGENICITY: No evidence available
11.5 TERATOLOGY: Data not available
11.6 REPRODUCTION: Data not available
11.7 MUTAGENICITY: Data not available

SECTION 12: ECOLOGICAL INFORMATION

Static acute 96 hour-LC50 for bluegills is 1,000 mg/L.
Static acute 96 hour-LC50 for rainbow trout is 770 mg/L.
Static acute 96 hour-LC50 for sheepshead minnow is >1,000 mg/L.
Static acute 96 hour-LC50 for mysid shrimp is 77 mg/L.

SECTION 13: DISPOSAL CONSIDERATIONS

Ammonium thiosulfate is not considered a hazardous waste under Federal Hazardous Waste Regulations, 40 CFR 261. Consult state and local regulations for different or more restrictive disposal regulations.

SECTION 14: TRANSPORT INFORMATION

14.1 DOT SHIPPING NAME: Ammonium thiosulfate solution
14.2 DOT HAZARD CLASS: NA
14.3 UN/NA NUMBER: NA
14.4 PACKING GROUP: NA
14.5 DOT PLACARD: NA
14.6 DOT LABEL(S): NA
14.7 IMO SHIPPING NAME: Ammonium thiosulfate solution
14.8 RQ (Reportable Quantity): NA
14.9 RR STCC NUMBER: 28-191-73

SECTION 15: REGULATORY INFORMATION

15.1 OSHA: This product is listed as a hazardous material under criteria of the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200.
15.2 SARA TITLE III:
a. EHS (Extremely Hazardous Substance) LIST: No
b. SECTION 311/312, (Tier I,II) CATEGORIES:
IMMEDIATE (acute): Yes
FIRE: No
SUDDEN RELEASE: No
REACTIVITY: No
DELAYED (chronic): No
c. SECTION 313 (Toxic Release Reporting-Form R): Yes

Chemical Name	CAS Number	Concentration
Ammonia	7664-41-7	14.6%

d. TPQ (Threshold Planning Quantity): No
15.3 CERCLA/SUPERFUND:
RQ (Reportable Quantity): No
15.4 TSCA (Toxic Substance Control Act) INVENTORY LIST: Yes
15.5 RCRA (Resource Conservation and Recovery Act) STATUS: NA
15.6 WHMIS (Canada) HAZARD CLASSIFICATION: NA
15.7 DOT HAZARDOUS MATERIAL (See Section 14): No
15.8 CAA HAZARDOUS AIR POLLUTANT (HAP): No

SECTION 16: OTHER INFORMATION

REVISIONS: The entire MSDS was reformatted to comply to ANSI Standard Z400.1-1993, by Technical Services-Tessengerlo Kerley, Inc.
ADDRESS UPDATED: 4/30/99

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