

PHOTOGRAPHERS' FORMULARY INC.

PO Box 950 • Condon MT 59826 • 800-922-5255 • FAX 406-754-2896

FORMULARY SILVER INTENSIFIER FOR NEGATIVES

These directions cover two kits: the 1/4-liter kit (Cat. number 05-0070) and the 1/2-liter kit (Cat. number 05-0080).

The chemicals in this kit are used to prepare an -intensifier that is equivalent to Kodak In-5 and DuPont 3-I. The intensifier acts by depositing silver metal on existing silver grains in the emulsion. The amount of new silver deposited is somewhat proportional to the amount of silver originally present in the negative. The intensified image is permanent, has greater contrast than the original negative, and can be toned.

The intensifier is used in room light and the extent of intensification is determined by inspection of the negative as intensification is taking place. After the negative has been intensified sufficiently, it must be fixed and washed.

CHEMICALS CONTAINED IN THIS KIT

Your kit contains the following chemicals:

| Chemical | Kit Size | |
|----------------------------------|-----------|------------|
| | 1/4 liter | 1/2 liter |
| Silver nitrate | 15 grams | 30 grams |
| Sodium sulfite | 15 grams | 30 grams |
| Sodium sulfite | 3.7 grams | 7.5 grams |
| Sodium thiosulfate, pentahydrate | 26 grams | 52.5 grams |
| Sodium thiosulfate, pentahydrate | 150 grams | 150 grams |
| Metol | 6 grams | 12 grams |

CHEMICAL SAFETY

All chemicals are cancerous and must be treated with respect. Please read the warning on each package. Two chemicals in this kit need special attention: metol and silver nitrate.

Metol: Some individuals become sensitized (develop allergic symptoms) when using metol. If this should occur, discontinue use and consult a physician.

Silver nitrate: is both an oxidizer (can supply oxygen to a fire) and a caustic. It can cause skin burns, clean up any spilled solid silver nitrate with water and dispose of any excess down the drain. Never dispose of solid silver nitrate in a wastepaper basket.

If solid silver nitrate comes into contact with the skin, a chemical burn may result. Wash the area with cold water followed by soap and water. Treat any wound in the same manner you would treat a heat burn.

When dilute solutions of silver nitrate are spilled on the skin, a brown to brown-black stain results. The color is due to silver metal bound to the protein of the skin and cannot be washed off. While there are chemical methods for removing these brown stains, the best procedure is to just let them wear off.

The user assumes all risks upon accepting these chemicals. IF FOR ANY REASON YOU DO NOT WISH TO ASSUME ALL RISKS PLEASE RETURN THE CHEMICALS FOR A FULL REFUND.

MIXING THE SOLUTIONS

Four stock solutions and a fixer will be mixed. The four stock solutions are used to prepare the working solution just prior to use and the fixer is for the after-treatment.

Silver Nitrate, Crystal, ACS

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Silver Nitrate, Crystal, ACS

Synonyms/Generic Names: Lunar caustic; Silver (1+) nitrate; Nitric acid, silver (1+) salt

Product Number: 4730

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Call: 920-623-2140 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Oxidizer, Carcinogen, Target Organ Effect, Harmful by ingestion, Corrosive

Target Organs: Eyes, Nerves, Blood, Lungs

Signal Word: Danger

Pictograms:



GHS Classification:

| | |
|--------------------------|-------------|
| Oxidizing solids | Category 2 |
| Acute toxicity, Oral | Category 4 |
| Skin corrosion | Category 1B |
| Serious eye damage | Category 1 |
| Acute aquatic toxicity | Category 1 |
| Chronic aquatic toxicity | Category 4 |

GHS Label Elements, including precautionary statements:

Hazard Statements:

| | |
|------|---|
| H272 | May intensify fire; oxidizer. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H400 | Very toxic to aquatic life. |
| H413 | May cause long lasting harmful effects to aquatic life. |

Precautionary Statements:

| | |
|----------------|--|
| P220 | Keep/Store away from clothing/ combustible materials. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310 | Immediately call a POISON CENTER or doctor/ physician. |

Potential Health Effects

| | |
|-------------------|---|
| Eyes | Causes eye burns. |
| Inhalation | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| Skin | Harmful if absorbed through skin. Causes skin burns. |
| Ingestion | Harmful if swallowed. |

NFPA Ratings

| | |
|------------------------|----|
| Health | 3 |
| Flammability | 0 |
| Reactivity | 0 |
| Specific hazard | OX |

HMIS Ratings

| | |
|-------------------|---|
| Health | 3 |
| Fire | 0 |
| Reactivity | 0 |
| Personal | J |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | Weight % | CAS # | EINECS# / ELINCS# | Formula | Molecular Weight |
|-----------------|----------|----------|-------------------|-------------------|------------------|
| Silver Chloride | 100 | 776188-8 | 231-853-9 | AgNO ₃ | 169.87 g/mol |

4. FIRST-AID MEASURES

| | |
|-------------------|--|
| Eyes | In case of eye contact, rinse with plenty of water and seek medical attention immediately. |
| Inhalation | Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately. |
| Skin | Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately. |
| Ingestion | Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately. |

5. FIRE-FIGHTING MEASURES

| | |
|--|---|
| Suitable (and unsuitable) extinguishing media | Product is not flammable. Use appropriate media for adjacent fire. Cool unopened containers with water. |
| Special protective equipment and precautions for firefighters | Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. |
| Specific hazards arising from the chemical | Emits toxic fumes (nitrogen oxides, silver oxides) under fire conditions. Oxidizing solid. (See also Stability and Reactivity section). |

6. ACCIDENTAL RELEASE MEASURES

| | |
|--|---|
| Personal precautions, protective equipment and emergency procedures | See section 8 for recommendations on the use of personal protective equipment. |
| Environmental precautions | Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements. |
| Methods and materials for containment and cleaning up | Pick up and arrange disposal without creating dust. Sweep up and place in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations. |

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of dusts.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Light sensitive. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

| Component | Exposure Limits | Basis | Entity |
|-----------------|------------------------|-------|--------|
| Silver Chloride | 0.01 mg/m ³ | TLV | ACGIH |
| | 0.01 mg/m ³ | PEL | OSHA |
| | 0.01 mg/m ³ | REL | NIOSH |

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

| | |
|-------------------|---|
| Eyes | Wear chemical safety glasses or goggles. |
| Inhalation | Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator. |
| Skin | Wear nitrile or rubber gloves, apron or lab coat. |
| Other | Not Available |

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|--|
| Appearance (physical state, color, etc.) | Colorless to white crystalline solid. |
| Odor | Not Available |
| Odor threshold | Not Available |
| pH | 6 - 7 |
| Melting point/freezing point | 212°C (413.6°F) |
| Initial boiling point and boiling range | 440°C (824°F) |
| Flash point | Not Flammable |
| Evaporation rate | Not Available |
| Flammability (solid, gas) | Not Flammable |
| Upper/lower flammability or explosive limit | Not Explosive |
| Vapor pressure | Not Available |
| Vapor density | 5.8 (Air = 1) |
| Density | 4.35 (Water = 1) |
| Solubility (ies) | Easily soluble in cold water, hot water. Soluble in diethyl ether. Very slightly soluble in acetone. Solubility in water: |
| Partition coefficient: n-octanol/water | log Pow: 5 |
| Auto-ignition temperature | Not Available |
| Decomposition temperature | 440°C (824°F) |

10. STABILITY AND REACTIVITY

| | |
|---|---|
| Chemical Stability | Stable |
| Possibility of Hazardous Reactions | Will not occur. |
| Conditions to Avoid | Light. |
| Incompatible Materials | Strong reducing agents, alcohols, ammonia, magnesium, strong bases. |
| Hazardous Decomposition Products | Nitrogen oxides, silver/silver oxides. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| | |
|--------------------|-------------------------------|
| Skin | Not Available |
| Eyes | Not Available |
| Respiratory | Not Available |
| Ingestion | LD50 Oral - rat - 1,173 mg/kg |

Carcinogenicity

| | |
|--------------|--|
| IARC | No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| ACGIH | No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |
| NTP | No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| OSHA | No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |

Signs & Symptoms of Exposure

| | |
|--------------------|---|
| Skin | Irritation, redness, itchiness. |
| Eyes | Irritation, redness, watering eyes, itchiness, corneal opacification, bleeding conjunctiva, burns of conjunctiva, argyria, blindness. |
| Respiratory | Burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. |
| Ingestion | burns, pain and burning in the mouth, violent abdominal pain, argyria -grayish/blackening of skin and mucous membranes, throat and abdomen, salivation, vomiting of black material, diarrhea, hypermotility, ulcerative gingivitis. |

| | |
|---------------------------------------|--|
| Chronic Toxicity | Not Available |
| Teratogenicity | Not Available |
| Mutagenicity | May affect genetic material. |
| Embryotoxicity | Not Available |
| Specific Target Organ Toxicity | May affect kidneys (lesions of kidneys, anuria) and lungs. |
| Reproductive Toxicity | May cause adverse reproductive effects. |
| Respiratory/Skin Sensitization | Not Available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

| | |
|-----------------------------|--|
| Aquatic Vertebrate | mortality NOEC - Oncorhynchus mykiss (rainbow trout) - 0.108 mg/l - 96.0 h mortality LOEC - Oncorhynchus mykiss (rainbow trout) - > 0.007 mg/l - 7.0 d LC50 - Leuciscus idus (Golden orfe) - 0.029 mg/l - 96.0 h LC50 - Oncorhynchus mykiss (rainbow trout) - 0.006 mg/l - 96.0 h |
| Aquatic Invertebrate | EC50 - Daphnia magna (Water flea) - 0.0006 mg/l - 48 h |
| Terrestrial | Not Available |

| | |
|--------------------------------------|--|
| Persistence and Degradability | Not Available |
| Bioaccumulative Potential | Lepomis macrochirus - 60 d Bioconcentration factor (BCF): 120 |
| Mobility in Soil | Not Available |
| PBT and vPvB Assessment | Not Available |
| Other Adverse Effects | Very toxic to aquatic life. |

13. DISPOSAL CONSIDERATIONS

| | |
|---------------------------|--|
| Waste Residues | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container. |
| Product Containers | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container. |

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

| | |
|------------------|------------------------------------|
| US DOT | UN1493, Silver nitrate, 5.1, pg II |
| TDG | UN1493, Silver nitrate, 5.1, pg II |
| IMDG | UN1493, Silver nitrate, 5.1, pg II |
| Marine Pollutant | No |
| IATA/ICAO | UN1493, Silver nitrate, 5.1, pg II |

15. REGULATORY INFORMATION

| | |
|---------------------------|---|
| TSCA Inventory Status | All ingredients are listed on the TSCA inventory. |
| DSCL (EEC) | All ingredients are listed on the DSCL inventory. |
| California Proposition 65 | Not Listed |
| SARA 302 | Not Listed |
| SARA 304 | Not Listed |
| SARA 311 | Silver nitrate |
| SARA 312 | Silver nitrate |
| SARA 313 | Listed: Silver nitrate |
| WHMIS Canada | CLASS C: Oxidizing material. CLASS E: Corrosive solid. |

16. OTHER INFORMATION

| Revision | Date |
|------------|------------|
| Revision 1 | 08-14-2012 |
| | |
| | |

Disclaimer: Columbus Chemical Industries, Inc. ("Columbus") believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Columbus has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. COLUMBUS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.



Material Safety Data Sheet

Creation Date 20-Jan-2010

Revision Date 20-Jan-2010

Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|--|
| Product Name | Sodium sulfite anhydrous |
| Cat No. | BP355-500; S430-3; S430-10; S430-500; S447-3; S447-500 |
| Synonyms | Disodium sulfite; Sulfurous acid, disodium salt (Crystalline/Powder/Certified ACS/Low Phosphate) |
| Recommended Use | Laboratory chemicals |
| Company Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100 | Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300 CHEMTREC®, Outside the USA: 703-527-3887 |

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Contact with acids liberates toxic gas. May cause eye, skin, and respiratory tract irritation . May cause central nervous system effects.

Appearance Off-white

Physical State Solid

odor odorless

Target Organs Central nervous system (CNS)

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes

May cause irritation.

Skin

May cause irritation. May be harmful in contact with skin.

Inhalation

May cause irritation of respiratory tract. May be harmful if inhaled.

Ingestion

May be harmful if swallowed. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects

Mutagenic effects have occurred in experimental animals..

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

| Component | CAS-No | Weight % |
|----------------|-----------|----------|
| Sodium sulfite | 7757-83-7 | 97 |

4. FIRST AID MEASURES

| | |
|---------------------------|---|
| Eye Contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur. |
| Inhalation | Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur. |
| Ingestion | Do not induce vomiting. Obtain medical attention. |
| Notes to Physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|---|--|
| Flash Point | No information available. |
| Method | No information available. |
| Autoignition Temperature | No information available. |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Suitable Extinguishing Media | Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.. |
| Unsuitable Extinguishing Media | No information available. |
| Hazardous Combustion Products | No information available. |
| Sensitivity to mechanical impact | No information available. |
| Sensitivity to static discharge | No information available. |

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

NFPA **Health** 1 **Flammability** 0 **Instability** 1 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| Personal Precautions | Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing. |
| Environmental Precautions | Should not be released into the environment. |
| Methods for Containment and Clean Up | Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. |

7. HANDLING AND STORAGE

| | |
|-----------------|---|
| Handling | Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothing. Keep away from acids. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near acids. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | |
|-----------------------------|---|
| Engineering Measures | Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. |
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection

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 and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-------------------------------------|---------------------------|
| Physical State | Solid |
| Appearance | Off-white |
| odor | odorless |
| Odor Threshold | No information available. |
| pH | 8.5-10 5% aq.sol. |
| Vapor Pressure | No information available. |
| Vapor Density | No information available. |
| Viscosity | No information available. |
| Boiling Point/Range | No information available. |
| Melting Point/Range | >500°C / 932°F |
| Decomposition temperature °C | 500 |
| Flash Point | No information available. |
| Evaporation Rate | No information available. |
| Specific Gravity | 2.630 |
| Solubility | Partly soluble in water |
| log Pow | No data available |

9. PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight 126.04
Molecular Formula Na₂SO₃

10. STABILITY AND REACTIVITY

Stability Air sensitive. Moisture sensitive.

Conditions to Avoid Incompatible products. Excess heat. Exposure to air. Exposure to moisture.

Incompatible Materials Strong oxidizing agents, Acids

Hazardous Decomposition Products Sulfur oxides, Sodium oxides

Hazardous Polymerization Hazardous polymerization does not occur

Hazardous Reactions . Contact with acids liberates toxic gas.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|----------------|-------------------|-------------|---|
| Sodium sulfite | 820 mg/kg (Rat) | Not listed | 22 mg/L (Rat) 1 h 5.5 mg/L (Rat) 4 h |

Irritation No information available.

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity There are no known carcinogenic chemicals in this product

Sensitization No information available.

Mutagenic Effects Mutagenic effects have occurred in experimental animals.

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

Other Adverse Effects See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|----------------|------------------|-----------------|----------------------|--------------------|
| Sodium sulfite | Not listed | Not listed | EC50 = 770 mg/L 17 h | LC50 24 h 330 mg/L |

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility

| Component | log Pow |
|----------------|---------|
| Sodium sulfite | -4 |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | CHINA | KECL |
|----------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|---------------|
| Sodium sulfite | X | X | - | 231-821-4 | - | | X | X | X | X | KE-31612 X |

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Not applicable

SARA 311/312 Hazardous Categorization

| | |
|-----------------------------------|----|
| Acute Health Hazard | No |
| Chronic Health Hazard | No |
| Fire Hazard | No |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard | No |

Clean Water Act

Not applicable

Clean Air Act

Not applicable

OSHA

Not applicable

CERCLA

Not Applicable

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Not applicable

U.S. Department of Transportation

| | |
|-----------------------------|---|
| Reportable Quantity (RQ): | N |
| DOT Marine Pollutant | N |
| DOT Severe Marine Pollutant | N |

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

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

WHMIS Hazard Class

Non-controlled

16. OTHER INFORMATION

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Tel: (412) 490-8929

Creation Date 20-Jan-2010

Print Date 20-Jan-2010

Revision Summary "****", and red text indicates revision

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS

SAFETY DATA SHEET

1. Identification

Product identifier: SODIUM THIOSULFATE

Other means of identification

Product No.: 3953, 3954

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.

Address: 3477 Corporate Parkway, Suite 200 Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:

Contact Person: Environmental Health & Safety

e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Not classified

Label elements

Hazard symbol:

No symbol

Signal word:

No signal word.

Hazard statement:

Not applicable

Precautionary statement

Not applicable

Other hazards which do not
result in GHS classification:

None.

3. Composition/information on ingredients

Substances

Composition comments:

The components are not hazardous or are below required disclosure limits.

4. First-aid measures

General information:

Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion:

Rinse mouth thoroughly. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation:

Move to fresh air. Get medical attention if symptoms persist.

Skin contact: Wash skin thoroughly with soap and water. Get medical attention if irritation

persists after washing. Wash contaminated clothing before reuse.
Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.
Most important symptoms/effects, acute and delayed
Symptoms: May cause irritation to skin, eyes, and respiratory tract.
Indication of immediate medical attention and special treatment needed
Treatment:
Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards:

In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing

media:

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing

media:

None known.

Specific hazards arising from

the chemical:

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting

procedures:

Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment

for fire-fighters:

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions,
protective equipment and
emergency procedures:

Keep unauthorized personnel away. Use personal protective equipment.

Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the MSDS for Personal Protective Equipment.

Methods and material for
containment and cleaning

up:

Avoid dust formation. Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

Notification Procedures:

Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling:

Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Avoid inhalation of dust. Wash thoroughly after handling.

Use only with adequate ventilation.

Conditions for safe storage,

including any

incompatibilities:

Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None of the components have assigned exposure limits.

Appropriate engineering

controls

No data available.

Individual protection measures, such as personal protective equipment

General information:

Good general ventilation (typically 10 air changes per hour) should be used.

Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection:

Use tight fitting goggles if dust is generated.

Skin protection

Hand protection:

Wear protective gloves.

Other:

Wear suitable protective clothing.

Respiratory protection:

In case of inadequate ventilation use suitable respirator.

Hygiene measures:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Provide eyewash station and safety shower.

9. Physical and chemical properties

Appearance

Physical state:

Solid

Form:

Crystals or powder.

Color:

Colorless

Odor:

Odorless

Odor threshold:

No data available.

pH:

6.0 - 8.5 (50 g/l, 20 °C)

Melting point/freezing point:

52 °C Decomposes

Initial boiling point and boiling range:

No data available.

Flash Point:

No data available.

Evaporation rate:

No data available.

Flammability (solid, gas):

No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):

No data available.

Flammability limit - lower (%):

No data available.

Explosive limit - upper (%):

No data available.

Explosive limit - lower (%):

No data available.

Vapor pressure:

No data available.

Vapor density:

No data available.

Relative density:

1.67 (20 °C)

Solubility(ies)

Solubility in water:

210 g/l (20 °C)

Solubility (other):

No data available.

Partition coefficient (n-octanol/water):

No data available.

Auto-ignition temperature:

No data available.

Decomposition temperature:

No data available.

Viscosity:

No data available.

Other information

Molecular weight:

158.13 g/mol (H₂O₃S₂.2Na)

10. Stability and reactivity

Reactivity:

No dangerous reaction known under conditions of normal use.

Chemical stability:

Material is stable under normal conditions.

Possibility of hazardous

reactions:

Hazardous polymerization does not occur.

Conditions to avoid:

Excessive heat.

Incompatible materials:

Strong oxidizing agents. Nitrates. Acids. Inorganic salts.

Hazardous decomposition

products:

Thermal decomposition may produce oxides of sulfur. Sodium oxides

11. Toxicological information

Information on likely routes of exposure

Ingestion:

May cause irritation of the gastrointestinal tract.

Inhalation:

May cause irritation to the respiratory system.

Skin contact:

May cause irritation.

Eye contact:

May cause temporary eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product:

No data available.

Dermal

Product:

No data available.

Inhalation

Product:

No data available.

Repeated dose toxicity

Product:

No data available.

Skin corrosion/irritation

Product:

May cause skin irritation.

Serious eye damage/eye irritation

Product:

May irritate eyes.

Respiratory or skin sensitization

Product:

Not a skin sensitizer.

Carcinogenicity

Product:

This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity

In vitro

Product:

No mutagenic components identified

In vivo

Product:

No mutagenic components identified

Reproductive toxicity

Product:

No components toxic to reproduction

Specific target organ toxicity - single exposure

Product:

No data available.

Specific target organ toxicity - repeated exposure

Product:

No data available.

Aspiration hazard

Product:

Not classified

Other effects:

None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:

No data available.

Aquatic invertebrates

Product:

No data available.

Chronic hazards to the aquatic environment:

Fish

Product:

No data available.

Aquatic invertebrates

Product:

No data available.

Toxicity to Aquatic Plants

Product:

No data available.

Persistence and degradability

Biodegradation

Product:

There are no data on the degradability of this product.

BOD/COD ratio

Product:

No data available.

Bioaccumulative potential

Biconcentration factor (BCF)

Product:

No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Product:

No data available.

Mobility in soil:

No data available.

Known or predicted distribution to environmental compartments

SODIUM THIOSULFATE

No data available.

Other adverse effects:

The product components are not classified as environmentally hazardous.

However, this does not exclude the possibility that large or frequent spills

can have a harmful or damaging effect on the environment.

13. Disposal considerations

Disposal instructions:

Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging:

Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Not listed.

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

None present or none present in regulated quantities.

SARA 311/312 Hazardous chemical

None present or none present in regulated quantities.

SARA 313 (TRI reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

Australia AICS:

On or in compliance with the inventory

Canada DSL Inventory List:

On or in compliance with the inventory

EINECS, ELINCS or NLP:

On or in compliance with the inventory

Japan (ENCS) List:

On or in compliance with the inventory

China Inv. Existing Chemical Substances:

Not in compliance with the inventory.

Korea Existing Chemicals Inv. (KECI):

On or in compliance with the inventory

Canada NDSL Inventory:

Not in compliance with the inventory.

Philippines PICCS:

On or in compliance with the inventory

US TSCA Inventory:

On or in compliance with the inventory

New Zealand Inventory of Chemicals:

On or in compliance with the inventory

Japan ISHL Listing:

On or in compliance with the inventory

Japan Pharmacopoeia Listing:

Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID

Flammability

Health

Reactivity

Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

0

0

1

Issue date:

09-08-2014

Revision date:

No data available.

Version #:

1.0

Further information:

No data available.

Disclaimer:

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TCI AMERICA

SAFETY DATA SHEET

Revision number: 2
Revision date: 10/06/2014

1. IDENTIFICATION

Product name: 4-(Methylamino)phenol Sulfate
Product code: M0145

Product use: For laboratory research purposes.
Restrictions on use: Not for drug or household use.

Company:
TCI America
9211 N. Harborside Street
Portland, OR 97203 U.S.A.
Telephone:
+1-800-423-8616 / +1-503-283-1681
Fax:
+1-888-520-1075 / +1-503-283-1987
e-mail:
sales-US@TCIchemicals.com
www.TCIchemicals.com

Emergency telephone number:
Chemical Emergencies:
TCI America (8:00am - 5:00pm) PST
+1-503-286-7624
Transportation Emergencies:
Chemtrec 24-Hour
+1-800-424-9300 (U.S.A.)
+1-703-527-3887 (International)
Responsible department:
TCI America
Environmental Health Safety and Security
+1- 503-286-7624

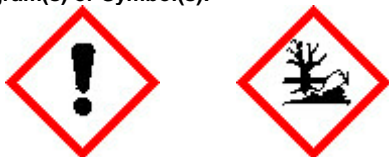
2. HAZARD(S) IDENTIFICATION

OSHA Haz Com: CFR 1910.1200: Acute Toxicity - Oral [Category 4]
Sensitization - Skin [Category 1]
Aquatic Hazard (Acute) [Category 1]
Aquatic Hazard (Long-Term) [Category 1]

Signal word: Warning!

Hazard Statement(s): Harmful if swallowed
May cause an allergic skin reaction
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects

Pictogram(s) or Symbol(s):



Precautionary Statement(s):

[Prevention]

Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling. Avoid breathing dusts or mists. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves.

[Response]

If swallowed: Immediately call a poison center or doctor. Rinse mouth. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

[Storage]

None

[Disposal]

Dispose of contents and container in accordance with US EPA guidelines for the classification and determination of hazardous waste listed in 40 CFR 261.3. (See Section 13)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Substance
Components: 4-(Methylamino)phenol Sulfate

3. COMPOSITION/INFORMATION ON INGREDIENTS

| | |
|-------------------|---|
| Percent: | >98.0%(HPLC)(N) |
| CAS Number: | 55-55-0 |
| Molecular Weight: | 344.38 |
| Chemical Formula: | C ₁₄ H ₁₈ N ₂ O ₂ ·H ₂ SO ₄ |

4. FIRST-AID MEASURES

| | |
|----------------------|---|
| Inhalation: | May cause coughing, difficult breathing and nausea. Call emergency medical service. Effects of exposure (inhalation) to substance may be delayed. Inhalation of vapors or contact with substance will result in contamination and potential harmful effects. Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. |
| Skin contact: | Call a poison center or doctor if you feel unwell. Effects of exposure (skin contact) to substance may be delayed. Remove and wash contaminated clothing before re-use. Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. |
| Eye contact: | If this chemical contacts the eyes, immediately wash (irrigate) the eyes with large amounts of water, occasionally lifting the lower and upper eyelids. If eye irritation persists get medical advice/attention. Move victim to fresh air. Check for and remove any contact lenses. Keep victim warm and quiet. Treat symptomatically and supportively. Effects of exposure to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. |
| Ingestion: | Harmful if swallowed. Effects of exposure (ingestion) to substance may be delayed. If swallowed, seek medical advice immediately and show the container or label. Do not use mouth-to-mouth method if victim ingested the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Loosen tight clothing such as a collar, tie, belt or waistband. If a person vomits place them in the recovery position so that vomit will not reenter the mouth and throat. Rinse mouth. Keep victim warm and quiet. Treat symptomatically and supportively. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. |

Symptoms/effects:

| | |
|-----------------|-------------------------------|
| Acute: | No data available |
| Delayed: | May cause skin sensitization. |

| | |
|-------------------------------------|--|
| Immediate medical attention: | WARNING: It might be hazardous to the person providing aid to give mouth-to-mouth respiration, because the inhaled material is harmful. CAUTION: Victim may be a source of contamination. If breathing has stopped, perform artificial respiration. Use first aid treatment according to the nature of the injury. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. |
|-------------------------------------|--|

5. FIRE-FIGHTING MEASURES

| | |
|--------------------------------------|---|
| Suitable extinguishing media: | Dry chemical, CO ₂ , water spray, or alcohol-resistant foam. Consult with local fire authorities before attempting large scale fire fighting operations. |
|--------------------------------------|---|

Specific hazards arising from the chemical

| | |
|---------------------------------------|---|
| Hazardous combustion products: | These products include: Carbon oxides Nitrogen oxides Silicates |
| Other specific hazards: | Closed containers may explode from heat of a fire. |

Special precautions for fire-fighters:

Use water spray or fog; do not use straight streams. Dike fire-control water for later disposal; do not scatter the material. Containers may explode when heated. Move containers from fire area if you can do it without risk.

Special protective equipment for fire-fighters:

Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire fighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations. Wear chemical protective clothing which is specifically recommended by the manufacturer. It may provide little or no thermal protection.

6. ACCIDENTAL RELEASE MEASURES

| | |
|---------------------------------------|--|
| Personal precautions: | Avoid contact with skin, eyes, and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (Section 8). Warn unnecessary personnel to move away. Stop leak if you can do it without risk. Ensure adequate ventilation. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. |
| Personal protective equipment: | Safety glasses. Wear protective clothing (chemical resistant suit and chemical resistant boots). Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear protective gloves (nitrile). |

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures: Prevent dust cloud. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and exercise caution. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Warn personnel to move away. Prevent entry into sewers, basements or confined areas; dike if needed.

Methods and materials for containment and cleaning up:

ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if without risk. Absorb with an inert material and put the spilled material in an appropriate waste disposal container. Use clean non-sparking tools to collect absorbed material. Dike far ahead of spill; use dry sand to contain the flow of material. Ventilate the area.

Environmental precautions:

Keep away from living quarters. Environmental hazard. Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Water runoff can cause environmental damage. Prevent entry into sewers, basements or confined areas; dike if needed.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid inhalation of vapor or mist. Do not ingest. Avoid contact with skin and eyes. Good general ventilation should be sufficient to control airborne levels. Keep container dry. Handle and open container with care. Wear suitable protective clothing, gloves and eye/face protection. When using do not eat, drink, or smoke. Keep away from sources of ignition.

Conditions for safe storage: Keep only in the original container in a cool well-ventilated place. Keep away from incompatibles. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid prolonged storage periods.

Storage incompatibilities: Store away from oxidizing agents

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits: No data available

Appropriate engineering controls:

Good general ventilation should be sufficient to control airborne levels. Ventilation is normally required when handling or using this product. Eyewash fountains should be provided in areas where there is any possibility that workers could be exposed to the substance. Follow safe industrial engineering/laboratory practices when handling any chemical.

Personal protective equipment

Respiratory protection: Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent.

Hand protection: Wear protective gloves.

Eye protection: Safety glasses.

Skin and body protection: Lab coat.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C): Solid

Form: Crystal - Powder

Color: White - Deep green

Odor: No data available

Odor threshold: No data available

Melting point/freezing point: 260°C (dec.) (500°F)

Boiling point/range: No data available

Decomposition temperature: No data available

Relative density: No data available

Kinematic Viscosity: No data available

**Partition coefficient:
n-octanol/water (log P_{ow})** No data available

Flash point: No data available

Flammability (solid, gas): No data available

Solubility(ies):

Water: Soluble (4.7g/100mL, 15°C)

Slightly soluble: Alcohols

Insoluble: Ether

pH: No data available

Vapor pressure: No data available

Vapor density: No data available

Dynamic Viscosity: No data available

Evaporation rate: No data available
(Butyl Acetate = 1)

Autoignition temperature: 531°C (988°F)

Flammability or explosive limits:

Lower: No data available

Upper: No data available

10. STABILITY AND REACTIVITY

| | |
|--|--|
| Reactivity: | Not Available. |
| Chemical Stability: | Moisture sensitive. Light sensitive. |
| Possibility of Hazardous Reactions: | No hazardous reactivity has been reported. |
| Conditions to avoid: | Exposure to light. Exposure to moisture. Moisture sensitive. |
| Incompatible materials: | Oxidizing agents |
| Hazardous Decomposition Products: | No data available |

11. TOXICOLOGICAL INFORMATION

RTECS Number: SL8650000

Acute Toxicity:

ipr-rat LDLo:50 mg/kg

orl-mus LD50:565 mg/kg

orl-rat LDLo:200 mg/kg

skn-gpg LD50:>1 g/kg

Skin corrosion/irritation:

skn-hmn 1 %/48H

Serious eye damage/irritation:

No data available

Respiratory or skin sensitization:

No data available

Germ cell mutagenicity:

mmo-sat 167 ug/plate (-S9)

Carcinogenicity:

No data available

IARC: No data available**NTP:** No data available**OSHA:** No data available**Reproductive toxicity:**

No data available

Routes of Exposure:

Inhalation, Eye contact, Ingestion, Skin contact.

Symptoms related to exposure:

Overexposure may result in serious illness or death. Skin contact may result in sensitization. Readily absorbed through skin.

Potential Health Effects:

No specific information available; skin and eye contact may result in irritation. May be harmful if inhaled or ingested.

Target organ(s):

No data available

12. ECOLOGICAL INFORMATION**Ecotoxicity****Fish:**

No data available

Crustacea:

No data available

Algae:

No data available

Persistence and degradability:

No data available

Bioaccumulative potential (BCF):

No data available

Mobility in soil:

No data available

Partition coefficient:

No data available

n-octanol/water (log P_{ow})**Soil adsorption (K_{oc}):**

No data available

Henry's Law:

No data available

constant (PaM³/mol)

13. DISPOSAL CONSIDERATIONS

| | |
|-------------------------------|---|
| Disposal of product: | Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil. |
| Disposal of container: | Dispose of as unused product. Do not re-use empty containers. |
| Other considerations: | Observe all federal, state and local regulations when disposing of the substance. |

14. TRANSPORT INFORMATION

DOT (US) Non-hazardous for transportation.

IATA Non-hazardous for transportation.

IMDG Non-hazardous for transportation.

15. REGULATORY INFORMATION**Toxic Substance Control Act (TSCA 8b.):**

This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

US Federal Regulations**CERCLA Hazardous substance and Reportable Quantity:**

SARA 313: Not Listed
SARA 302: Not Listed

State Regulations**State Right-to-Know**

Massachusetts Not Listed
New Jersey Not Listed
Pennsylvania Not Listed
California Proposition 65: Not Listed

Other Information**NFPA Rating:**

Health: 2
Flammability: 0
Instability: 0

HMIS Classification:

Health: 2
Flammability: 0
Physical: 0

International Inventories

WHMIS hazard class: D2A: Materials causing other toxic effects. (Very Toxic)
D2B: Materials causing other toxic effects. (Toxic)
EC-No: 200-237-1

16. OTHER INFORMATION

Revision date: 10/06/2014

Revision number: 2

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.