1. IDENTIFICATION

Product code: A1270
Product Name: AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS

Other means of identification
Synonyms: Thiocyanic acid, ammonium salt
Ammonium rhodanate
Ammonium sulfocyanate
Rhodanid/Rhodanide
Trans-aid
Ammonidum isothicyanate
Ammonium sulfocyanide
Rhodanine, ammonium salt

CAS #: 1762-95-4
RTECS #: XK7875000
CI#: Not available

Recommended use of the chemical and restrictions on use
Uses advised against: No information available

Supplier: Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com

Emergency telephone number: Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Acute toxicity - Oral</th>
<th>Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Dermal</td>
<td>Category 4</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Gases)</td>
<td>Category 4</td>
</tr>
</tbody>
</table>

Label elements

Product code: A1270
Product name: AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS
Warning

Hazard statements
Harmful if swallowed
Harmful in contact with skin
Harmful if inhaled

Other hazards
Not available

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
Specific measures (see .? on this label)
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
<td>1762-95-4</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First aid measures
General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
4. FIRST AID MEASURES

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Harmful by inhalation. Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Harmful if swallowed. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms
May cause digestive (gastrointestinal) tract irritation. Ingestion may cause vomiting and nausea. May affect behavior/central nervous system. Hallucinations. Personality and mood changes. Distorted perception. Mania. Disorientation. Weakness. Seizures. It may affect metabolism. Thiocyanate ion is slowly excreted in urine; it is not decomposed to cyanide in appreciable quantities. Thiocyanate ion readily diffuses into all tissues. It appears early in saliva and urine. It may cause symptoms similar to cyanide poisoning. It may be metabolized to cyanide which inhibits cytochrome oxidase thus impairing cellular respiration.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat as cyanide poisoning. Antidote: Always have a cyanide antidote kit (amyl nitrite, sodium nitrite) on hand when working with cyanide compounds. Get medical advice on how to use it and when it should be used..

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon oxides, Sulfur oxides, Nitrogen oxides, Ammonia, Hydrogen cyanide

Specific hazards: May be combustible at high temperatures When heated to decomposition it emits toxic fumes Toxic gases and vapors may be released when cyanide decomposes Ammonium Thiocyanate + Lead Nitrate may cause explosion

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Avoid dust formation. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials. Remove all sources of ignition.

Safe Handling Advice
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe vapours/dust. Do not ingest. Do not smoke. Avoid shock and friction. Use only in well-ventilated areas. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Hygroscopic. Protect from moisture. Keep container tightly closed in a dry and well-ventilated place. Store away from incompatible materials. Keep away from heat and sources of ignition. Store in a segregated and approved area.

Incompatible Materials:

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate 1762-95-4</td>
<td>5 mg/m³ TWA (as CN)</td>
<td>None</td>
<td>None</td>
<td>None</td>
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</table>

Canada

<table>
<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate 1762-95-4</td>
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<td>None</td>
<td>None</td>
<td>10 ppm Ceiling (as CN)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11 mg/m³ Ceiling (as CN)</td>
</tr>
</tbody>
</table>

Australia and Mexico

<table>
<thead>
<tr>
<th>Components</th>
<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
</table>

Product code: A1270
Product name: AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS
### Appropriate engineering controls

**Engineering measures to reduce exposure:**
Ensure adequate ventilation, especially in confined areas. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Individual protection measures, such as personal protective equipment

**Personal Protective Equipment**

<table>
<thead>
<tr>
<th>Protection Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye protection:</strong></td>
<td>Safety glasses with side-shields</td>
</tr>
<tr>
<td><strong>Skin and body protection:</strong></td>
<td>Chemical resistant apron. Long sleeved clothing. Gloves.</td>
</tr>
<tr>
<td><strong>Respiratory protection:</strong></td>
<td>Wear respirator with dust filter. Be sure to use an approved/certified respirator or equivalent.</td>
</tr>
<tr>
<td><strong>Hygiene measures:</strong></td>
<td>Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands and face before breaks and immediately after handling the product.</td>
</tr>
</tbody>
</table>

---

**9. PHYSICAL AND CHEMICAL PROPERTIES**
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.
Odor: Odorless.
Formula: NH4SCN
Flashpoint (°C/°F): No information available.
Lower Explosion Limit (%): No information available.
Melting point/range(°C/°F): 149.6-154°C/ 301.3-309°F
Decomposition temperature(°C/°F): 170°C/338°F
Vapor pressure @ 20°C (kPa): No information available.
VOC content (g/L): No information available.
Viscosity: No information available.
Appearance: Crystalline powder.
Taste: No information available.
Flammability: No information available.
Flash Point Tested according to: Not available.
Upper Explosion Limit (%): No information available.
Boiling point/range(°C/°F): No information available.
Density (g/cm3): No information available.
Odor threshold (ppm): No information available.
Miscibility: No information available.
Color: White.
Molecular/Formula weight: 76.12 g/mol
Flash point (°C): No data available.
Autoignition Temperature (°C/°F): No information available.
pH: 4.5-6.0 (5% solution)
Specific gravity: 1.3057
Vapor density: No information available.
Partition coefficient (n-octanol/water): -2.287
Solubility:
Easily soluble in water
Soluble in Acetone
Soluble in ammonia
Soluble in Alcohol
Freely soluble in Methanol
Very soluble in Ethanol
Highly soluble in liquid ammonia and liquid sulfur dioxide
Practically insoluble in Chloroform
Practically insoluble in Ethyl Acetate

10. STABILITY AND REACTIVITY

Reactivity
Reactive with oxidizing agents
Reactive with acids
It may liberate toxic cyanide fumes when it is mixed with acids
May cause an explosion with lead nitrate
Explosive reaction when heated with potassium nitrate
Moisture sensitive.

Chemical stability
Stability: Hygroscopic. Stable under recommended storage conditions.

Possibility of Hazardous Reactions:
Hazardous polymerization does not occur
May release toxic and/or corrosive fumes
Contact with acids liberates very toxic gas

Conditions to avoid:

Product code: A1270
Product name: AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS
**Incompatible Materials:**

**Hazardous decomposition products:**

**Other Information**
**Corrosivity:**
Extremely corrosive in the presence of copper, brass, iron. Non-corrosive in presence of glass.

**Special Remarks on Corrosivity:**
No information available

---

### 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

**Principal Routes of Exposure:**
Ingestion. Inhalation. Skin.

**Acute Toxicity**

#### Component Information

**Ammonium Thiocyanate - 1762-95-4**

**LD50/oral/rat** = 750 mg/kg Oral LD50 Rat
**LD50/oral/mouse** = 500 mg/kg oral LD50 mouse (RTECS)
**LD50/dermal/rat** = No information available
**LD50/dermal/rabbit** = No information available
**LC50/inhalation/rat** = No information available
**LC50/inhalation/mouse** = No information available
**Other LD50 or LC50 information** = 430 mg/kg oral TDLo human
500 mg/kg oral LD50 guinea pig

#### Product Information

**LD50/oral/rat** =
VALUE- Acute Tox Oral = 750 mg/kg

**LD50/oral/mouse** =
Value - Acute Tox Oral = 500 mg/kg

**LD50/dermal/rabbit**
VALUE-Acute Tox Dermal = No information available

**LD50/dermal/rat**
VALUE -Acute Tox Dermal = No information available

**LC50/inhalation/rat**
VALUE-Vapor = No information available
**VALUE-Gas** = No information available
**VALUE-Dust/Mist** = No information available

**LC50/inhalation/mouse**
VALUE -Vapor = No information available
**VALUE - Gas** = No information available

---

**Product code:** A1270
**Product name:** AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS
Symptoms

Skin Contact: Harmful in contact with skin. May cause skin irritation.

Eye Contact: May cause eye irritation.

Inhalation: May cause irritation of the respiratory tract and mucous membranes irritation. Harmful by inhalation.

Ingestion: Harmful if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting. May affect behavior/central nervous system (hallucinations, distorted perceptions, personality and mood changes, mania, disorientation, weakness, seizures). May affect metabolism.

Aspiration hazard: No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity: Prolonged or repeated exposure may affect the blood. Prolonged or repeated ingestion may affect the thyroid. Chronic exposure may affect behavior and cause personality/mood changes.

Sensitization: No information available

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic

<table>
<thead>
<tr>
<th>Components</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Reproductive toxicity: No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure: No information available

STOT - repeated exposure: No information available

Target Organs: Blood. Thyroid.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product code: A1270

Product name: AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS
12. ECOLOGICAL INFORMATION

Ecotoxicity effects: Harmful to aquatic organisms, causes long-term adverse effects in the aquatic environment.

Ammonium Thiocyanate - 1762-95-4
Freshwater Algae Data: 65 mg/L LC50 Oncorhynchus mykiss (rainbow trout) 96h static
Persistence and degradability: No information available
Bioaccumulative potential: No information available
Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products: Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging: Empty containers should be taken for local recycling, recovery or waste disposal. Do not re-use empty containers Dispose of as unused product.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: None
ERG No: No information available
Marine Pollutant: No data available
DOT RQ (lbs): No information available

TDG (Canada)
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

ADR
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available

Product code: A1270
Product name: AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS
14. TRANSPORT INFORMATION

Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
MFAG: No information available
Maximum Quantity: No information available

RID
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Classification Code: No information available
Description: No information available

ICAO
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

IATA
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
<td>Present</td>
<td>Present KE-01750</td>
<td>Present</td>
<td>Present (1)-405 (1)-142</td>
<td>Present</td>
<td>Present</td>
<td>Present 217-175-6</td>
</tr>
</tbody>
</table>

U.S. Regulations

Product code: A1270
Product name: AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS
Ammonium Thiocyanate

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 0119
2308
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
New York Release Reporting - List of Hazardous Substances:
5000 lb RQ
1 lb RQ
Louisiana Reportable Quantity List for Pollutants: 5000lb final RQ
2270kg final RQ
California Directors List of Hazardous Substances: Present


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
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</tr>
</tbody>
</table>

CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
<td>5000 lb final RQ, 2270 kg final RQ</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Canada

WHMIS hazard class:
Non-controlled

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

<table>
<thead>
<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
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</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
<td>Present</td>
<td>Not Listed</td>
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<table>
<thead>
<tr>
<th>Components</th>
<th>CEPA Schedule I - Toxic Substances</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting</th>
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<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
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<td>Not listed</td>
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</tbody>
</table>

Product code: A1270
Product name: AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS
EU Classification

R-phrase(s)
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38 - Irritating to eyes, respiratory system and skin.

S -phrase(s)
S 2 - Keep out of the reach of children.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36 - Wear suitable protective clothing.
S46 - If swallowed, seek medical advice immediately and show this container or label.
S 1/2 - Keep locked up and out of the reach of children.
S20/21 - When using, do not eat, drink or smoke.
S36/37 - Wear suitable protective clothing and gloves.

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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</thead>
<tbody>
<tr>
<td>Ammonium Thiocyanate</td>
<td></td>
<td>No information</td>
<td></td>
</tr>
</tbody>
</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Xn - Harmful.

16. OTHER INFORMATION

Product code: A1270
Product name: AMMONIUM THIOCYANATE, CRYSTAL, REAGENT, ACS
Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet