

## SAFETY DATA SHEET

Preparation Date: 05/27/2015

Revision Date: 10/31/2018

Revision Number: G2

### 1. IDENTIFICATION

**Product identifier**

**Product code:** A1230  
**Product Name:** AMMONIUM PEROXYDISULFATE, PURIFIED

**Other means of identification**

**Synonyms:** Ammonium peroxydisulfate  
 Ammonium persulfate  
 Ammonium perfulphate  
 Bis(Ammonium) Peroxodisulfate  
 Diammonium peroxydisulfate  
 Diammonium peroxydisulphate  
 Diammonium persulfate  
 Peroxydisulfuric acid  
 Peroxydisulfuric acid, diammonium salt  
 Persulfate d'ammonium [French]

**CAS #:** 7727-54-0  
**RTECS #** SE0350000  
**CI#:** Not available

**Recommended use of the chemical and restrictions on use**

**Recommended use:** Used to desize cotton; additive in hydrogen peroxide bleaching; In printed circuit boards; copper foil etching; initiators for olefin polymerization in aqueous systems; used in emulsions polymerization; oxidizer; bleaching agents; photography; manufacture of other persulfates; deodorizing and bleaching oils; aniline dyes; preserving foods; depolarizers in batteries; washing infected yeast; to remove hypo; removing pyrogallol stains; making soluble starch; analytical chemistry.

**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 according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2B
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Oxidizing solids	Category 3

**Label elements**

**Danger**

**Hazard statements**  
Harmful if swallowed  
Causes skin irritation  
Causes eye irritation  
May cause respiratory irritation  
May cause an allergic skin reaction  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May intensify fire; oxidizer



**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

May be harmful if inhaled

**Precautionary Statements - Prevention**

- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Avoid breathing dust/fume/gas/mist/vapors/spray
- In case of inadequate ventilation wear respiratory protection
- Contaminated work clothing must not be allowed out of the workplace
- Use only outdoors or in a well-ventilated area
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep/Store away from clothing and other combustible materials
- Take any precaution to avoid mixing with combustibles
- Wear respiratory protection
- Wear protective gloves
- Wear eye/face protection

**Precautionary Statements - Response**

- IN CASE OF FIRE: Use water to extinguish. Do not use dry chemicals or foams. CO2 or Halon may provide limited control.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- IF ON SKIN: Wash with plenty of water
- Take off contaminated clothing and wash it before reuse
- If skin irritation or rash occurs: Get medical advice/attention
- If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed  
Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS-No.	Weight %
Ammonium Persulfate	7727-54-0	100

**4. FIRST AID MEASURES**

**First aid measures**

- General Advice:** National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.
- Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If symptoms persist, call a physician.
- Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention.
- Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion:** 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**
- Causes eye irritation
  - Causes skin irritation
  - May cause irritation of respiratory tract
  - May cause an allergic skin reaction
  - May cause allergy or asthma symptoms or breathing difficulties if inhaled

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically.

**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:** Water. CO2 may be of no value in extinguishing fires involving oxidizers and may only provide limited control.

**Unsuitable Extinguishing Media:** Dry chemical. Halons. Foam.

**Specific hazards arising from the chemical**

**Hazardous Combustion Products:**

Sulfur Oxides. Nitrogen Oxides.

**Specific hazards:**

Oxidizer. Keep away from combustible materials (wood, paper, oil, clothing, etc.). The product is not flammable, but it may cause fire when in contact with other material. Contact with combustible or organic materials may cause fire. Will accelerate burning when involved in a fire. Container explosion may occur under fire conditions or when heated. When heated to decomposition it emits toxic fumes.

**Special Protective Actions for Firefighters**

**Specific Methods:**

For large fires, flood fire area with water from a distance. Cool affected containers with flooding quantities of water. Do not get water inside containers. DO NOT use combustible materials such as sawdust.

**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:**

Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid dust formation. Remove all sources of ignition. Keep combustibles (wood, paper, oil, clothing, etc.) away from spilled material.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter 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**

Sweep up and shovel into suitable containers for disposal. Do not use combustible materials such as paper towels, sawdust, clothing, etc. to clean up spill. 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. Avoid dust formation. Keep away from incompatible materials. All equipment used when handling the product must be grounded.

**Safe Handling Advice**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe dust. Keep away from combustible material. 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:**

Moisture sensitive. Keep container tightly closed in a dry and well-ventilated place. Do not store near combustible materials. Store in a segregated and approved area.

**Incompatible Materials:**

Reducing agents  
 Combustible materials  
 Organic materials  
 Metals  
 Aluminum  
 Iron  
 Sodium Peroxide

<b>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</b>
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**Control parameters****National occupational exposure limits****United States**

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Ammonium Persulfate	7727-54-0	None	None	None	None

**Canada**

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Ammonium Persulfate	7727-54-0	0.1 mg/m <sup>3</sup> TWA	None	None	None

**Australia and Mexico**

Components	CAS-No.	Australia	Mexico
Ammonium Persulfate	7727-54-0	None	None

**Appropriate engineering controls****Engineering measures to reduce exposure:**

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**

**Eye protection:** Goggles

**Skin and body protection:** Chemical resistant apron  
 Long sleeved clothing  
 Gloves

**Respiratory protection:** Wear respirator with dust filter.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Solid	<b>Appearance:</b> No information available.	<b>Color:</b> White to yellowish.
<b>Odor:</b> Unpleasant.	<b>Taste</b> No information available.	<b>Formula:</b> (NH <sub>4</sub> ) <sub>2</sub> S <sub>2</sub> O <sub>8</sub>
<b>Molecular/Formula weight (g/mole):</b> 228.19	<b>Flammability:</b> No information available	<b>Flash point (°C):</b> > 93.3°C
<b>Flashpoint (°C/°F):</b> > 93.3°C/ 200°F	<b>Flash Point Tested according to:</b> Closed cup	<b>Autoignition Temperature (°C/°F):</b> No information available
<b>Lower Explosion Limit (%):</b> No information available	<b>Upper Explosion Limit (%):</b> No information available	<b>Melting point/range(°C/°F):</b> 120°C/ 248°F
<b>Decomposition temperature(°C/°F):</b> No information available	<b>Boiling point/range(°C/°F):</b> No information available	<b>Bulk density:</b> No information available
<b>Density (g/cm<sup>3</sup>):</b> No information available	<b>Specific gravity:</b> 1.98	<b>pH:</b> 1.0-2.0 at 228 g/L @ 25°C
<b>Vapor pressure @ 20°C (kPa):</b> No information available	<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> 7.88
<b>VOC content (g/L):</b> No information available	<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> No information available
<b>Viscosity:</b> No information available	<b>Miscibility:</b> No information available	<b>Solubility:</b> Freely soluble in water

## 10. STABILITY AND REACTIVITY

### Reactivity

Oxidizer. Reacts with reducing agents, organic material, combustible materials, and powdered metals

### Chemical stability

**Stability:** Moisture Sensitive. Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Incompatible materials. Contact with combustible materials (wood, paper, oil, clothing, etc.). Exposure to moisture. Exposure to moist air.

**Incompatible Materials:**  
Reducing agents  
Combustible materials  
Organic materials  
Metals  
Aluminum  
Iron  
Sodium Peroxide

**Hazardous decomposition products:** Nitrogen oxides (NO<sub>x</sub>). Sulfur oxides. Ammonia.

**Other Information**

**Corrosivity:** No information available

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

**11. TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Principal Routes of Exposure:**

Inhalation. Ingestion.

**Acute Toxicity**

**Component Information**

Ammonium Persulfate	
CAS-No.	7727-54-0

**LD50/oral/rat** = 495 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = No information available  
**LD50/dermal/rabbit** = >10000 mg/kg Dermal LD50 Rabbit  
**LD50/dermal/rat** = 2000 mg/kg  
**LC50/inhalation/rat** = 520 mg/L Inhalation LC50 Rat 1 h  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50 information** = No information available

**Product Information**

**LD50/oral/rat** =  
**VALUE- Acute Tox Oral** = 495 mg/kg

**LD50/oral/mouse** =  
**Value - Acute Tox Oral** = No information available

**LD50/dermal/rabbit**  
**VALUE-Acute Tox Dermal** = > 10000 mg/kg

**LD50/dermal/rat**  
**VALUE -Acute Tox Dermal** = 2000 mg/kg

**LC50/inhalation/rat**  
**VALUE-Vapor** = No information available  
**VALUE-Gas** = No information available  
**VALUE-Dust/Mist** = 520 mg/l

**LC50/Inhalation/mouse**  
**VALUE-Vapor** = No information available  
**VALUE - Gas** = No information available  
**VALUE - Dust/Mist** = No information available

**Symptoms**

**Skin Contact:** Causes skin irritation. Moderate skin irritation. May cause sensitization by skin contact.

**Eye Contact:** Causes eye irritation. Mild eye irritation.

**Inhalation** Causes respiratory tract (nose, throat, lung) irritation with coughing and shortness of breath. May cause chemical pneumonitis. May cause pulmonary edema, inflammation, edema of bronchi and larynx.

**Ingestion** May be harmful if swallowed. Causes gastrointestinal (digestive) tract irritation with nausea, vomiting, and diarrhea.

**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 inhalation may cause allergic reaction. Skin: Sensitizer. May cause allergic skin reaction (allergic contact dermatitis).

**Sensitization:** May cause sensitization by inhalation and skin contact.

**Mutagenic Effects:** No information available

**Carcinogenic effects:** Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Ammonium Persulfate	7727-54-0	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*NTP (National Toxicology Program)*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

**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** Respiratory system.  
**STOT - repeated exposure** No information available.  
**Target Organs:** Skin. Respiratory system.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** Aquatic environment.

*Ammonium Persulfate - 7727-54-0*

**Freshwater Fish Species Data:** 103 mg/L LC50 *Lepomis macrochirus* 96 h static 1 76.3 mg/L LC50 *Oncorhynchus mykiss* 96 h static 1 323 mg/L LC50 *Poecilia reticulata* 96 h 1

**Water Flea Data:** 120 mg/L EC50 *Daphnia magna* 48 h

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available.

**Product code:** A1230

**Product name:** AMMONIUM PEROXYDISULFATE, PURIFIED



**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

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Ammonium Persulfate	7727-54-0	None	None	None	None

### 14. TRANSPORT INFORMATION

**DOT**

**UN-No:** Not Regulated  
**Proper Shipping Name:** Ammonium persulfate  
**Hazard Class:** 5.1  
**Subsidiary Class** No information available  
**Packing group:** No information available  
**Emergency Response Guide Number** No information available  
**Marine Pollutant** No data available  
**DOT RQ (lbs):** No information available  
**Special Provisions** No Information available  
**Symbol(s):** No information available  
**Description:** UN1444,Ammonium persulfate ,5.1,PG III

**TDG (Canada)**

**UN-No:** UN1444  
**Proper Shipping Name:** Ammonium persulfate  
**Hazard Class:** 5.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Marine Pollutant** No Information available  
**Description:** UN1444,AMMONIUM PERSULFATE,5.1,PG III

**ADR**

**UN-No:** UN1444  
**Proper Shipping Name:** Ammonium persulphate  
**Hazard Class:** 5.1  
**Packing Group:** III  
**Subsidiary Risk:** No information available  
**Description:** UN1444 Ammonium persulphate,5.1,III

**IMO / IMDG**

**UN-No:** UN1444  
**Proper Shipping Name:** Ammonium persulphate  
**Hazard Class:** 5.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Marine Pollutant** No information available

**Product code:** A1230

**Product name:** AMMONIUM PEROXYDISULFATE, PURIFIED

EMS: F-A

**RID**

UN-No: UN1444  
Proper Shipping Name: Ammonium persulphate  
Hazard Class: 5.1  
Subsidiary Risk: No information available  
Packing Group: III  
Description: UN1444 Ammonium persulphate,5.1,III

**ICAO**

UN-No: UN1444  
Proper Shipping Name: Ammonium persulphate  
Hazard Class: 5.1  
Subsidiary Risk: No information available  
Packing Group: III  
Description: UN1444,Ammonium persulphate,5.1,PG III

**IATA**

UN-No: UN1444  
Proper Shipping Name: Ammonium persulphate  
Hazard Class: 5.1  
Subsidiary Risk: No information available  
Packing Group: III  
ERG Code: 5L  
Special Provisions: No information available  
Description: UN1444,Ammonium persulphate,5.1,PG III

**15. REGULATORY INFORMATION**

**International Inventories**

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Ammonium Persulfate	7727-54-0	PresentACTIVE	Present KE-09815	Present	Present (1)-406	Present	Present	Present 231-786-5

**U.S. Regulations**

Ammonium Persulfate

New Jersey RTK Hazardous Substance List: 0111

FDA - Direct Food Additives 21 CFR 172.892 (<=0.075%)

FDA - 21 CFR - Total Food Additives 172.892, 175.105, 176.170, 177.1200, 178.3520

- List Sourced from EAFUS

**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.**

**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)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Ammonium Persulfate	7727-54-0	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Components	CAS-No.	CERCLA -	Section 302	Section 302	Section 313 -	Section 313 -
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Product code: A1230

Product name: AMMONIUM PEROXYDISULFATE, PURIFIED

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		Hazardous Substances and their Reportable Quantities	Extremely Hazardous Substances and TPQs	Extremely Hazardous Substances and RQs	Chemical Category	Reporting de minimis
Ammonium Persulfate	7727-54-0	None	None	None	None	None

## U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) - Health and Safety Reporting
Ammonium Persulfate	7727-54-0	Not Applicable	Not Applicable

## Canada

### WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

Component  
Ammonium Persulfate  
7727-54-0 ( 100 )

WHMIS 2015 Hazard Classification  
Oxidizing solids - Category 3: H272 May intensify fire, oxidizer.;  
Acute toxicity - Oral - Category 4: H302 Harmful if swallowed.;  
Respiratory sensitizers - Category 1: H334 May cause allergic or  
asthmatic symptoms or breathing difficulties if inhaled.; Skin  
sensitizers - Category 1: H317 May cause allergic skin reaction.

**Canada Hazardous Products Regulation** This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

## Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Ammonium Persulfate	7727-54-0	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Ammonium Persulfate	7727-54-0	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Ammonium Persulfate	7727-54-0	Not listed

## EU Classification

### EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Ammonium Persulfate	7727-54-0	Oxidizing solids - Ox. Sol. 3: H272 May intensify fire, oxidizer.; Acute toxicity - Oral - Acute Tox. 4: H302 Harmful if swallowed. (Minimum classification); Skin corrosion/irritation - Skin Irrit. 2: H315 Causes skin irritation.; Serious Eye Damage/Eye Irritation - Eye Irrit. 2: H319 Causes serious eye irritation.; Respiratory sensitizers - Resp. Sens. 1: H334 May cause allergic or asthmatic symptoms or breathing difficulties if inhaled.; Skin sensitizers - Skin Sens. 1: H317 May cause allergic skin reaction.; Specific

Product code: A1230

Product name: AMMONIUM  
PEROXYDISULFATE, PURIFIED

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		target organ toxicity - Single exposure - STOT SE 3: H335 May cause respiratory irritation.016-060-00-6
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EU - CLP (1272/2008)

**R-phrase(s)**

R 8 - Contact with combustible material may cause fire.  
R22 - Harmful if swallowed.  
R36/37/38 - Irritating to eyes, respiratory system and skin.  
R42/43 - May cause sensitization by inhalation and skin contact.

**S -phrase(s)**

S 2 - Keep out of the reach of children.  
S22 - Do not breathe dust.  
S24 - Avoid contact with skin.  
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S37 - Wear suitable gloves.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Ammonium Persulfate	7727-54-0	Xn; R22 Xi; R36/37/38 R42/43 O; R8	No information	

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

**Indication of danger:**

O - Oxidising.  
Xn - Harmful.  
Xi - Irritant.



**16. OTHER INFORMATION**

Preparation Date: 05/27/2015  
Revision Date: 10/31/2018  
Prepared by: Sonia Owen

**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**