

SAFETY DATA SHEET

Preparation Date: 3/25/2015

Revision Date: 3/15/2016

Revision Number: G2

1. IDENTIFICATION

Product identifier

Product code: P1370
Product Name: POTASSIUM PERMANGANATE, CRYSTAL, REAGENT, ACS

Other means of identification

Synonyms: Permanganate of potash
CAS #: 7722-64-7
RTECS # SD6475000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
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)

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

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

Label elements

Product code: P1370

Product name: POTASSIUM
 PERMANGANATE, CRYSTAL,
 REAGENT, ACS

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Danger

Hazard statements

Harmful if swallowed

Causes severe skin burns and eye damage

May cause respiratory irritation

May intensify fire; oxidizer



Hazards not otherwise classified (HNOC)

Not Applicable

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

Do not breathe dust/fume/gas/mist/vapors/spray

Wear protective gloves/protective clothing/eye protection/face protection

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/ .? /combustible materials

Take any precaution to avoid mixing with combustibles .?

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

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.

Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. 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

Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Potassium Permanganate 7722-64-7	7722-64-7	100

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)

Skin Contact:

Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact:

Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

Most important symptoms and effects, both acute and delayed**Symptoms**

Severe skin and eye irritation or burns. May cause irreversible eye damage. Irritating to respiratory system. May cause corneal injury. May cause coughing and shortness of breath. May cause pulmonary edema. May affect the liver. It may affect the kidneys. Ingestion may cause vomiting and nausea. May cause diarrhea. Causes digestive (gastrointestinal) tract irritation. May cause gastrointestinal (digestive) tract burns. Can burn mouth, throat, and stomach. Central nervous system effects. May affect the cardiovascular system.

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. Foam. Halons.

Specific hazards arising from the chemical

Hazardous Combustion Products:

No information available.

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

Special Protective Actions for Firefighters

Specific Methods:

For large fires, flood fire area with water from a distance. Cool closed containers with flooding quantities of water until fire is out. 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:

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing. 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. 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

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. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapours/dust. Keep away from combustible material. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:

Reducing agents. Organic materials. Combustible materials. Metals. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Potassium Permanganate 7722-64-7	None	None	0.02 mg/m ³ TWA (respirable fraction, as Mn) 0.1 mg/m ³ TWA(inhalable fraction, as Mn) Listed under manganese inorganic compounds	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Potassium Permanganate 7722-64-7	0.2 mg/m ³ TWA(as Mn) Listed under manganese inorganic compounds	0.2 mg/m ³ TWA(as Mn) Listed under manganese inorganic compounds	0.02 mg/m ³ TWA (respirable fraction, as Mn) 0.1 mg/m ³ TWA(inhalable fraction, as Mn) Listed under manganese inorganic compounds	0.2 mg/m ³ TWAEV(as Mn) Listed under manganese inorganic compounds

Australia and Mexico

Components	Australia	Mexico
Potassium Permanganate 7722-64-7	None	0.2 mg/m ³ TWA(as Mn) Listed under manganese inorganic compounds

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. 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:	Safety glasses Safety glasses with side-shields
Skin and body protection:	Chemical resistant apron. Gloves. Long sleeved clothing.
Respiratory protection:	Effective dust mask. Wear respirator with dust filter.
Hygiene measures:	Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Solid

Appearance:

Crystals.

Color:

Dark purple.

Odor:

Odorless.

Taste

Sweet with astringent aftertaste.

Formula:

KMnO₄

Molecular/Formula weight:

158.03

Flammability:

No information available

Flashpoint (°C/°F):

No information available.

Flash Point Tested according to:

Not available

Autoignition Temperature (°C/°F):

No information available

Lower Explosion Limit (%):

No information available

Upper Explosion Limit (%):

No information available

pH:

No information available

Melting point/range(°C/°F):

No information available

Boiling point/range(°C/°F):

No information available

Decomposition temperature(°C/°F):

> 240 °C/>464 °F

Bulk density:

No information available

Density (g/cm³):

2.7 @ 20°C

Specific gravity:

2.7 @ 15-20°C

Vapor pressure @ 20°C (kPa):

No information available

Evaporation rate:

No information available

Vapor density:

No information available

VOC content (g/L):

No information available

Odor threshold (ppm):

No information available

Partition coefficient

(n-octanol/water):

No information available

Viscosity:

No information available

Miscibility:

No information available

Solubility:

Soluble in organic solvents

Soluble in Acetic acid

Soluble in pyridine

Soluble in benzonitrile

Soluble in acetic anhydride

Soluble in trifluoroacetic acid

Solubility in Water: 64 g/l @ 20 deg. C

Solubility in Water: 125 g/l @ 40 deg. C

Soluble in Acetone

Soluble in Methanol

10. STABILITY AND REACTIVITY

Reactivity

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May react with reducing agents, acids, formaldehyde, ammonia, ammonium salts, ammonium nitrate, dimethylformamide, glycerol, combustible materials, alcohols, arsenites, bromides, iodides, charcoal, organic materials, ferrous or mercurous salts, hypophosphites, hyposulfites, sulfites, peroxides, oxalates, ethylene glycol, metal powders, phosphorus, sulfur

Spontaneously flammable on contact with ethylene glycol.

Potassium Permanganate being conveyed through propylene tube ignited the tube.

When solid hydroxylamine is brought into contact with solid potassium permanganate, there is produced immediately a white flame.

Potassium permanganate decomposes hydrogen trisulfide so rapidly that sufficient heat is liberated to ignite the trisulfide.

When Antimony or arsenic and solid potassium permanganate are ground together, the metals ignite.

Take care in handling as explosions may occur if it is brought in contact with organic or other readily oxidizable substances, either in solution or in dry state.

Explosive in contact with sulfuric acid or hydrogen peroxide.

Potassium permanganate + acetic acid or acetic anhydride can explode if permanganate is not kept cold.

Explosions can occur when permanganates come on contact with benzene, carbon disulfide, diethyl ether, ethyl alcohol, petroleum, or organic matter.

Contact with glycerol may produce explosion.

Crystals of potassium permanganate explode vigorously when ground with phosphorous.

A mixture of .5% potassium permanganate + ammonium nitrate explosive caused an explosion 7 hrs. later.

Addition of Potassium permanganate + dimethylformamide to give a 20% solution led to an explosion after 5 min.

During a preparation of chlorine by addition of the concentrated acid (Hydrochloric acid) to solid potassium permanganate, a sharp explosion occurred on one occasion

Chemical stability

Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Reducing agents. Organic materials. Combustible materials. Metals. Acids.

Hazardous decomposition products: No information available

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:

Eyes. Ingestion. Inhalation. Skin.

Acute Toxicity

Component Information

Potassium Permanganate - 7722-64-7

LD50/oral/rat = 750 mg/kg Oral LD50 Rat (RTECS and European Chemicals Bureau IUCLID dataset)

1090mg/kg oral LD50 rat (European Chemicals Bureau IUCLID dataset)

LD50/oral/mouse = 2157 mg/kg (RTECS and European Chemicals Bureau IUCLID dataset)

750 mg/kg (RTECS and European Chemicals Bureau IUCLID dataset)

LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = 1151 mg/kg Oral LD50 Guinea Pig
100 mg/kg oral LDL woman
135-143 oral LDL human

Product Information

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

LD50/oral/mouse =
Value - Acute Tox Oral = 750mg/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
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact:	Contact causes severe skin irritation and possible burns. It can cause brown stains on the skin. May cause hardening of the skin.
Eye Contact:	Causes severe irritation and burns. Possible eye damage. May cause corneal damage. May cause permanent injury.
Inhalation	Irritating to respiratory system. Symptoms may include coughing and shortness of breath. It may cause pulmonary edema.
Ingestion	Harmful if swallowed. Causes severe digestive (gastrointestinal)tract irritation with nausea, vomiting and possible burns. May affect respiration (hypoxia, dyspnea), cardiovascular system(hypertension, hypotension, tachycardia), liver (hepatitis, jaundice, hepatocellular necrosis), blood (methemoglobinemia), urinary system (renal failure, albuminuria, hematuria, proteinuria, chemical burns),behavior/central nervous system (somnolence, headache, dizziness, tremor, paresthesia, fatigue, and even coma and death at high levels).
Aspiration hazard	No information available

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

Chronic Toxicity Chronic exposure may affect the liver and kidneys
Prolonged or repeated inhalation can cause respiratory tract irritation, bronchospasm, chronic bronchitis with coughing, wheezing, phlegm and/or shortness of breath

Sensitization: No information available

Mutagenic Effects: Mutations in microorganisms
Experiments with bacteria and/or yeast have shown mutagenic effects

Carcinogenic effects: Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Potassium Permanganate	Not listed	Group A4- Not Classifiable as a Human Carcinogen (listed under manganese, inorganic compounds)	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

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: Central nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Potassium Permanganate - 7722-64-7

Freshwater Fish Species Data: 0.3-0.6 mg/L LC50 Oncorhynchus mykiss 96 h
0.769-1.27 mg/L LC50 Oncorhynchus mykiss 96 h static 1
1.08-1.38 mg/L LC50 Oncorhynchus mykiss 96 h 1
1.8-5.6 mg/L LC50 Lepomis macrochirus 96 h static 1
2.3 mg/L LC50 Lepomis macrochirus 96 h flow-through 1
2.7 mg/L LC50 Lepomis macrochirus 96 h 1
2.97-3.11 mg/L LC50 Cyprinus carpio 96 h 1
3.16-3.77 mg/L LC50 Cyprinus carpio 96 h 1
3.3-3.93 mg/L LC50 Carassius auratus 96 h static 1
Water Flea Data: 0.84 mg/L LC50 Daphnia magna 48 h

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

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Potassium Permanganate	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN1490
Proper Shipping Name: Potassium permanganate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
ERG No: 140
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Special Provisions: No Information available
Symbol(s): R3

TDG (Canada)

UN-No: UN1490
Proper Shipping Name: Potassium permanganate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant: No Information available

Product code: P1370

Product name: POTASSIUM
PERMANGANATE, CRYSTAL,
REAGENT, ACS

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14. TRANSPORT INFORMATION

ADR

UN-No: UN1490
Proper Shipping Name: Potassium permanganate
Hazard Class: 5.1
Packing Group: II
Subsidiary Risk: No information available

IMO / IMDG

UN-No: UN1490
Proper Shipping Name: Potassium permanganate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant: No information available
EMS: F-H

RID

UN-No: UN1490
Proper Shipping Name: Potassium permanganate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II

ICAO

UN-No: UN1490
Proper Shipping Name: Potassium permanganate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II

IATA

UN-No: UN1490
Proper Shipping Name: Potassium permanganate
Hazard Class: 5.1
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 5L
Special Provisions: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Potassium Permanganate	Present	Present KE-29180	Present	Present (1)-446	Present	Present	Present 231-760-3

U.S. Regulations

Potassium Permanganate

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 1578
New Jersey - Discharge Prevention - List of Hazardous Substances: Present

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PERMANGANATE, CRYSTAL,
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Potassium Permanganate

Pennsylvania RTK: Environmental hazard

Pennsylvania RTK - Environmental Hazard List Present

Minnesota - Hazardous Substance List: Present (as Manganese compounds)

New York Release Reporting - List of Hazardous Substances:

100 lb RQ

Louisiana Reportable Quantity List for Pollutants: 100lbfinal RQ

45.4kgfinal RQ

California Directors List of Hazardous Substances: Present

FDA - Direct Food Additives 21 CFR 172.892

FDA - 21 CFR - Total Food Additives 172.892 175.105 178.1010

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	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Potassium Permanganate	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
Potassium Permanganate	100 lb final RQ 45.4 kg final RQ	None	None	Listed under Manganese compounds	1%

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Potassium Permanganate	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

C Oxidizing materials

E Corrosive material

Potassium Permanganate

C E

C D2B 5%, 15%

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.

Components	WHMIS Ingredient Disclosure List -
Potassium Permanganate	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Potassium Permanganate	Present	Not Listed

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Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Potassium Permanganate	Not listed	Not listed

EU Classification

R-phrases

R 8 - Contact with combustible material may cause fire.

R22 - Harmful if swallowed.

R50 - Very toxic to aquatic organisms.

R53 - May cause long-term adverse effects in the aquatic environment.

S-phrases

S 2 - Keep out of the reach of children.

S60 - This material and its container must be disposed of as hazardous waste.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

Components	Classification	Concentration Limits:	Safety Phrases
Potassium Permanganate	Xn; R22 N; R50-53 O; R8	No information	S2 S60 S61

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

Indication of danger:

O - Oxidising.

Xn - Harmful.

N - Dangerous for the environment.

Xn



O



N



16. OTHER INFORMATION

16. OTHER INFORMATION

Preparation Date: 3/25/2015
Revision Date: 3/15/2016
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