

## SAFETY DATA SHEET

Preparation Date: 09/04/2019

Revision date 09/04/2019

Revision Number: G1

### 1. IDENTIFICATION

**Product identifier**

**Product code:** D1043  
**Product Name:** N,N-DIMETHYL-P-PHENYLENEDIAMINE DIHYDROCHLORIDE

**Other means of identification**

**Synonyms:** p-Dimethylaminoaniline dihydrochloride  
 Dimethyl-p-phenylenediamine hydrochloride  
 p-Phenylenediamine, N,N-dimethyl-, dihydrochloride  
 USAF EK-7423

**CAS #:** 536-46-9  
**RTECS #** ST1300000  
**CI#:** Not available

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

**Recommended use:** Laboratory chemicals. Research and Development. Manufacture of substances.  
**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:** Tom Tyner (USA - West Coast)  
**Contact Person:** Ibad Tirmiz (USA - 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 2
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Gases)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1

**Label elements**

Danger

**Hazard statements**

Toxic in contact with skin or if inhaled  
Fatal if swallowed  
Causes skin irritation  
Causes serious eye irritation  
May cause an allergic skin reaction

**Hazards not otherwise classified (HNOC)**

May cause respiratory irritation

**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  
Use only outdoors or in a well-ventilated area  
Contaminated work clothing must not be allowed out of the workplace

**Precautionary Statements - Response**

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 attention.  
IF ON SKIN: Wash with plenty of water  
Call a POISON CENTER or physician if you feel unwell  
Take off immediately all contaminated clothing  
Wash contaminated clothing before reuse  
If skin irritation or rash occurs: Get medical attention  
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician.  
IF SWALLOWED: Immediately call a POISON CENTER or physician  
Rinse mouth

**Precautionary Statements - Storage**

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

**Precautionary Statements - Disposal**

Dispose of contents and container to an approved waste disposal plant in accordance with local, regional, national and international regulations as applicable

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS No	Weight-%
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Product code: D1043

Product name:  
N,N-DIMETHYL-P-PHENYLENEDIAMI  
NE DIHYDROCHLORIDE

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N,N-Dimethyl-p-phenylenediamine Dihydrochloride	536-46-9	100
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#### 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. First aider needs to protect himself. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- Skin Contact:** Toxic in contact with skin. 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 center immediately.
- Eye Contact:** Flush eyes with water for 15 minutes. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms persist, call a physician.
- 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. Fatal if swallowed.

##### Most important symptoms and effects, both acute and delayed

- Symptoms**
- May cause methemoglobinemia and cyanosis
  - Harmful by inhalation and in contact with skin
  - May cause respiratory irritation
  - May cause burning or stinging sensation, redness of the skin, inflammation of the skin.
  - Causes skin irritation
  - May cause sensitization by skin contact
  - Causes eye irritation
  - Eye contact may result in redness or pain

##### 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:** Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray mist, or foam.
- Unsuitable Extinguishing Media:** Do not use a solid (straight) water stream as it may scatter

and spread fire.

### **Specific hazards arising from the chemical**

#### **Hazardous combustion products**

Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). hydrogen chloride gas.

#### **Specific hazards**

May be combustible at high temperatures. Fire may produce irritating and/or toxic gases.

### **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. Wear personal protective equipment. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

#### **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Prevent product from entering drains. Do not let this chemical enter the environment.

### **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. 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 open flames, hot surfaces and sources of ignition. Keep away from incompatible materials.

#### **Safe Handling Advice:**

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Do not breathe dust. Do not ingest. Keep away from sources of ignition - no smoking. Handle in accordance with good industrial hygiene and safety practice.

### **Conditions for safe storage, including any incompatibilities**

#### **Technical Measures/Storage Conditions:**

Sensitive to light. Store in light-resistant containers. Hygroscopic. Protect from moisture. Keep container tightly closed in a dry and well-ventilated place. Store away from incompatible materials. Store in a segregated and

approved area. Store at room temperature in the original container.

**Incompatible Materials:**

- Chloroformates
- Strong oxidizing agents
- Water
- Moisture
- Light

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**National occupational exposure limits**

**United States**

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
N,N-Dimethyl-p-phenyle nediamine Dihydrochloride	536-46-9	None	None	None	None

**Canada**

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
N,N-Dimethyl-p-phenyle nediamine Dihydrochloride	536-46-9	None	None	None	None

**Australia and Mexico**

Component	CAS No	Australia	Mexico
N,N-Dimethyl-p-phenylenediamine Dihydrochloride	536-46-9	None	None

**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:** Goggles or Safety glasses with side-shields.

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

**Respiratory protection:** Wear respirator with dust filter. or. Effective dust mask.

**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  
Wash hands and face before breaks and immediately after handling the product

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Solid	<b>Appearance:</b> Powder.	<b>Color:</b> White.
<b>Odor:</b> No information available.	<b>Taste</b> No information available.	<b>Formula</b> C8H12N2.2HCl
<b>Molecular/Formula weight (g/mole):</b> 209.12	<b>Flammability (solid, gas)</b> no data available	<b>Flashpoint (°C/°F):</b> No information available
<b>Flash Point Tested according to:</b> Not available	<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> 212°C/ 414°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/cm3):</b> No information available
<b>Specific gravity:</b> No information available	<b>pH</b> No information available	<b>Vapor pressure @ 20°C (kPa):</b> No information available
<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> No information available	<b>VOC content (g/L):</b> No information available
<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> 1.61	<b>Viscosity:</b> No information available
<b>Miscibility:</b> No information available	<b>Solubility:</b> Easily soluble in cold water	

## 10. STABILITY AND REACTIVITY

### Reactivity

No information available

### Chemical stability

**Stability:** Sensitive to light. Hygroscopic. Stable under recommended storage conditions.

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

**Conditions to avoid:** Exposure to light. Exposure to moisture. Exposure to moist air. Heat. Ignition sources. Incompatible materials.

**Incompatible Materials:** Chloroformates  
Strong oxidizing agents  
Water  
Moisture  
Light

**Hazardous decomposition products:** Carbon oxides. Hydrogen chloride. Nitrogen oxides (NOx).

**Product code:** D1043

**Product name:**  
N,N-DIMETHYL-P-PHENYLENEDIAMI  
NE DIHYDROCHLORIDE

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**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:**  
Ingestion. Inhalation. Skin. Eyes.

**Acute Toxicity**

**Component Information**

N,N-Dimethyl-p-phenylenediamine Dihydrochloride	
CAS No	536-46-9

- LD50/oral/rat** = No information available
- LD50/oral/mouse** = No information available
- 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** = 25 mg/kg intraperitoneal LD50 mouse

**Product Information**

**LD50/oral/rat** =  
**Value - Acute Toxicity** = No information available

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

**LD50/dermal/rabbit**  
**Value - Acute Toxicity** = No information available

**LD50/dermal/rat**  
**VALUE - Acute Tox** = 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:** Harmful in contact with skin. Causes skin irritation. May cause sensitization by

skin contact. Can cause redness and pain. Skin contact may result in redness, pain, inflammation, itching, scaling, and/or blistering. Absorption through the skin may cause methemoglobinemia (the formation of methemoglobin in the blood which causes deficient oxygenation of the blood due to decreased available hemoglobin).

**Eye Contact:** Causes eye irritation. Redness and pain.

**Inhalation** Harmful by inhalation. May cause irritation of respiratory tract. May cause respiratory tract irritation. It may cause methemoglobinemia (deficient oxygenation of the blood), cyanosis (bluish discoloration of skin and lips due to deficient oxygenation of the blood), which can result in fatigue, dizziness, headache, convulsions/seizures, tachycardia, hypertension, dyspnea (labored breathing), and death.

**Ingestion** Fatal if swallowed. May cause methemoglobinemia, (the formation of methemoglobin in the blood which causes deficient oxygenation of the blood due to decreased available hemoglobin). Signs and symptoms of methemoglobinemia include shortness of breath, cyanosis (a bluish discoloration of the skin, lips, mucous membranes), mental status changes such as headache, mental impairment, fatigue, muscular weakness, exercise intolerance, lightheadedness, dizziness, incoordination, seizures, and loss of consciousness. Arterial blood with elevated methemoglobin levels has a characteristic chocolate-brown color as compared to normal bright red oxygen containing arterial blood. Severe methemoglobinemia is characterized by bradycardia or tachycardia (slow or fast heart beat), dysrhythmias, seizures, coma and death.

**Aspiration hazard** No information available.

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

**Chronic Toxicity** No information available.

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

**Mutagenic Effects:** No information available

**Carcinogenic effects:** Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
N,N-Dimethyl-p-phenylenediamine Dihydrochloride	536-46-9	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** No information available.  
**STOT - repeated exposure** No information available.  
**Target Organs:** No information available.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** No data available.  
**Persistence and degradability:** No information available  
**Bioaccumulative potential:** No information available.  
**Mobility in soil** No information available  
**Other adverse effects** 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. Dispose of removed cover layers as polyolefin waste.

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
N,N-Dimethyl-p-phenylenediamine Dihydrochloride	536-46-9	None	None	None	None

**14. TRANSPORT INFORMATION**

**DOT**

**UN-No:** UN2811  
**Proper Shipping Name:** Toxic solids, organic, n.o.s.  
**Hazard Class** 6.1  
**Subsidiary Class** No information available  
**Packing group:** III  
**Emergency Response Guide Number** 154  
**Marine Pollutant** No data available  
**DOT RQ (lbs):** No information available  
**Special Provisions** IB8, IP3, T1, TP33  
**Symbol(s):** [DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.

**Description:** UN2811, Toxic solids, organic, n.o.s., 6.1, III

**TDG (Canada)**

**UN-No:** UN2811  
**Proper Shipping Name:** Toxic solid, organic, n.o.s.  
**Hazard Class** 6.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Marine Pollutant** No Information available  
**Description:** UN2811, Toxic solid, organic, n.o.s., 6.1, III

**ADR**

**UN Number** UN2811  
**Proper Shipping Name:** Toxic solid, organic, n.o.s.  
**Transport hazard class(es)** 6.1  
**Packing group** III  
**Subsidiary Risk:** No information available  
**Special Provisions** 274, 614  
**Description:** UN2811, Toxic solid, organic, n.o.s., 6.1, III

**IMDG**

**UN-No:** UN2811  
**Proper Shipping Name:** Toxic solids, organic, n.o.s.  
**Hazard Class:** 6.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Marine Pollutant** No information available  
**EMS:** F-A  
**Special Provisions** 223, 274  
**Description** UN2811, Toxic solid, organic, n.o.s. (N,N-DIMETHYL-P-PHENYLENEDIAMINE DIHYDROCHLORIDE), 6.1, III

**RID**

**UN Number** UN2811  
**Proper Shipping Name:** Toxic solid, organic, n.o.s.  
**Transport hazard class(es)** 6.1  
**Subsidiary Risk:** No information available  
**Packing group** III  
**Special Provisions** 274, 614  
**Description:** UN2811, Toxic solid, organic, n.o.s., 6.1, III

**ICAO (air)**

**UN-No:** UN2811  
**Proper Shipping Name:** Toxic solid, organic, n.o.s.  
**Hazard Class** 6.1  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** UN2811, Toxic solid, organic, n.o.s., 6.1, III  
**Special Provisions** A3, A5

**IATA**

**UN Number** UN2811  
**Proper Shipping Name:** Toxic solid, organic, n.o.s.  
**Transport hazard class(es)** 6.1  
**Subsidiary Risk:** No information available  
**Packing group** III  
**Precautionary Statements -** 6L

**Response  
Special Provisions  
Description:**

No information available  
UN2811, Toxic solid, organic, n.o.s., 6.1, III

**15. REGULATORY INFORMATION**

**International Inventories**

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia (AICS)	EINECS-No.
<i>N,N-Dimethyl-p-phenylenediamine Dihydrochloride</i>	536-46-9	PresentACTIVE	Present KE-11210	Present	Not present	Present	Present	Present 208-635-7

**U.S. Regulations**

**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)

Component	CAS No	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>N,N-Dimethyl-p-phenylenediamine Dihydrochloride</i>	536-46-9	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Component	CAS No	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 de minimis
<i>N,N-Dimethyl-p-phenylenediamine Dihydrochloride</i>	536-46-9	None	None	None	None	None

**U.S. TSCA**

Component	CAS No	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>N,N-Dimethyl-p-phenylenediamine Dihydrochloride</i>	536-46-9	Not Applicable	Not Applicable

**Canada**

**WHMIS 2015 - GHS Classifications**

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

**Canada Hazardous Products Regulation**

This product has not 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

## DSL/NDSL

Component	CAS No	Canada (DSL)	Canada (NDSL)
N,N-Dimethyl-p-phenylenediamine Dihydrochloride	536-46-9	Present	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
N,N-Dimethyl-p-phenylenediamine Dihydrochloride	536-46-9	Not listed
Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
N,N-Dimethyl-p-phenylenediamine Dihydrochloride	536-46-9	Not listed

## EU Classification

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

Component	CAS No	EU GHS - SV - CLP (1272/2008)
N,N-Dimethyl-p-phenylenediamine Dihydrochloride	536-46-9	

### EU - CLP (1272/2008)

#### **R-phrase(s)**

R43 - May cause sensitization by skin contact  
R28 - Very toxic if swallowed  
R23/24 - Toxic by inhalation and in contact with skin  
R36/38 - Irritating to eyes and skin

#### **S -phrase(s)**

S28 - After contact with skin, wash immediately with plenty of water  
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)  
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
N,N-Dimethyl-p-phenylenediamine Dihydrochloride	536-46-9		No information	

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

#### Indication of danger:

T - Toxic  
Xi - Irritant

T



Xi



## 16. OTHER INFORMATION

Preparation Date: 09/04/2019  
Revision date: 09/04/2019  
Prepared by: Sonia Owen

Product code: D1043

Product name:  
N,N-DIMETHYL-P-PHENYLENEDIAMI  
NE DIHYDROCHLORIDE

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**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**