

SAFETY DATA SHEET

Preparation Date: 04/23/2015

Revision date 04/11/2019

Revision Number: G2

1. IDENTIFICATION

Product identifier

Product code: T2510
Product Name: P-TOLUIDINE

Other means of identification

Synonyms: 1-Amino-4-methylbenzene
 4-Amino-1-methylbenzene
 4-Aminotoluen [Czech]
 4-Aminotoluene
 4-Methylaniline
 4-Methylbenzenamine
 4-Toluidine
 Aniline, p-methyl-
 Benzenamine, 4-methyl-
 Naphtol AS-KG
 Naphtol AS-KGLL
 Toluidine, p-
 p-Aminotoluene
 p-Methylaniline
 p-Methylbenzenamine
 p-Toluidin [Czech]
 p-Toluidyna [Polish]
 p-Tolylamine
CAS #: 106-49-0
RTECS # XU3150000
CI#: 37107

Recommended use of the chemical and restrictions on use

Recommended use: Chemical intermediate. Dyes.
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 4
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1

Label elements

Danger

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



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Very toxic to aquatic life

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
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
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 advice/attention.
IF ON SKIN: Wash with plenty of water
Call a POISON CENTER or doctor/physician if you feel unwell
Remove/Take off immediately all contaminated clothing
Wash contaminated clothing before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

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

Component	CAS No	Weight-%
p-Toluidine	106-49-0	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. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

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

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician or Poison Control Centre 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. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms
Causes skin irritation
Causes serious eye irritation
Causes sensitization
Inhalation of dust will produce irritation to gastrointestinal or respiratory tract, characterized by burning, sneezing, and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death
May cause allergy or asthma symptoms or breathing difficulties if inhaled
Fatal if inhaled
Ingestion may cause nausea, vomiting, and diarrhea
May affect behavior/central nervous system
May cause methemoglobinemia and cyanosis
May affect the liver
Drowsiness
Headache
Weakness
Confusion
Somnolence

Convulsions
Seizures

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: Use water spray or water mist, alcohol-resistant foam, Dry chemical or Carbon dioxide (CO₂).

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x).

Specific hazards May be combustible at high temperatures.

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. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition.

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 Use appropriate tools to put the spilled solid in a suitable 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. Do not breathe dust. Do not ingest. 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:

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Store at room temperature in the original container. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:

Oxidizing agents
Acids
Bases
Aniline
Toluidine
Alkalis
Acid chlorides
Acid anhydrides
Chloroformates

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
p-Toluidine	106-49-0	None	None	2 ppm TWA	None

Canada

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
p-Toluidine	106-49-0	2 ppm TWA 8.8 mg/m ³ TWA	2 ppm TWA	None	None

Australia and Mexico

Component	CAS No	Australia	Mexico
p-Toluidine	106-49-0	2 ppm TWA 8.8 mg/m ³ TWA	2 ppm TWA

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
Skin and body protection:	Long sleeved clothing Chemical resistant apron Gloves
Respiratory protection:	Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.
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

Physical state: Solid	Appearance: Leaflets.	Color: Colorless. White.
Odor: Aromatic. Winey.	Taste Burning.	Formula C7H9N
Molecular/Formula weight (g/mole): 107.16	Flammability (solid, gas) no data available	Flashpoint (°C/°F): 87°C/ 188.6°F
Flash Point Tested according to: Closed cup	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): 1.1%
Upper Explosion Limit (%): 6.6%	Melting point/range(°C/°F): 44°C/ 111.2°F	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): 200-201°C/ 392-393.8°F	Bulk density: No information available	Density (g/cm3): No information available
Specific gravity: 0.961	pH No information available	Vapor pressure @ 20°C (kPa): No information available
Evaporation rate: No information available	Vapor density: 3.90	VOC content (g/L): No information available
Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): 1.39	Viscosity: No information available
Miscibility: No information available	Solubility: Easily soluble in methanol, diethyl ether, acetone. Very slightly soluble in cold water. Soluble in about 135 parts water or 6.64 g/l at 20 deg. C. Very soluble in ethanol. Freely soluble in carbon disulfide, oils, dilute acids	

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents, acids, bases, aromatic amines (aniline, toluidine)

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: Oxidizing agents
Acids
Bases
Aniline
Toluidine
Alkalis
Acid chlorides
Acid anhydrides
Chloroformates

Hazardous decomposition products: Carbon oxides. Nitrogen oxides (NOx).

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:

Skin. Ingestion. Inhalation.

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document
Component Information

p-Toluidine	
CAS No	106-49-0

LD50/oral/rat = 336 mg/kg Oral LD50 Rat
LD50/oral/mouse = 330 mg/kg Oral LD50 Mouse
LD50/dermal/rabbit = 890 mg/kg Dermal LD50Rabbit
LD50/dermal/rat = No information available
LC50/inhalation/rat = 640 mg/m³ Inhalation LC50 Rat 1 h
LC50/inhalation/mouse = No information available
Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =
Value - Acute Tox = 336 mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = 330 mg/kg

LD50/dermal/rabbit

Value - Acute Tox = 890 mg/kg

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 = 640 mg/m³

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Toxic in contact with skin. Causes skin irritation. It can be absorbed through the skin. May cause allergic skin reaction.

Eye Contact: Causes serious eye irritation.

Inhalation Fatal if inhaled. May cause respiratory irritation.

Ingestion Harmful if swallowed. Ingestion may cause nausea, vomiting, diarrhea. May affect behavior/central nervous system (CNS)/peripheral nervous system (CNS depression, drowsiness, headache, weakness, confusion, somnolence, convulsions/seizures, spastic paralysis with or without sensory change). May cause methemoglobinemia (an increase in blood methemoglobin) resulting in cyanosis (a bluish discoloration of the skin and lips due to deficient oxygenated of the blood), a trouble breathing. May also affect the liver (jaundice, urinary system/kidneys/bladder (hemorrhagic cystitis with painful frequent micturation, hematuria, anuria proteinuria).

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 skin contact may cause defatting and dermatitis. Prolonged or repeated ingestion may cause weight loss and affect the blood (normocytic anemia), urinary system (see acute ingestion). It may also cause nausea, weakness, vomiting, tinnitus and other symptoms similar to acute ingestion.

Sensitization: May cause sensitization by skin contact.

Mutagenic Effects: May affect genetic material

Carcinogenic effects: Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
p-Toluidine	106-49-0	Not listed	A3 Confirmed Animal	Not listed	Not listed	Not listed	Not listed

			Carcinogen with Unknown Relevance to Humans				
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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: Blood. Kidneys. Central nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Very toxic to aquatic organisms.

p-Toluidine - 106-49-0

Algae/aquatic plants

Fish

EC50: =118mg/L (48h, Tetrahymena pyriformis)
LC50: 135 - 163mg/L (96h, Pimephales promelas) LC50: 100 - 220mg/L (96h, Brachydanio rerio)

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

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
p-Toluidine	106-49-0	None	None	None	U353

14. TRANSPORT INFORMATION

DOT

UN-No: UN3451
Proper Shipping Name: Toluidines, solid
Hazard Class 6.1
Subsidiary Class No information available
Packing group: II
Emergency Response Guide Number 153
Marine Pollutant Severe Marine Pollutant
DOT RQ (lbs): No information available
Special Provisions IB8, IP2, IP4, T3, TP33
Symbol(s): No information available
Description: UN3451, Toluidines, solid, 6.1, II

TDG (Canada)

UN-No: UN3451
Proper Shipping Name: Toluidines, solid
Hazard Class 6.1
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant No Information available
Description: UN3451, Toluidines, solid, 6.1, II

ADR

UN Number UN3451
Proper Shipping Name: Toluidines, solid
Transport hazard class(es) 6.1
Packing group II
Subsidiary Risk: No information available
Special Provisions 279
Description: UN3451, Toluidines, solid, 6.1, II, ENVIRONMENTALLY HAZARDOUS

IMDG

UN-No: UN3451
Proper Shipping Name: Toluidines, solid
Hazard Class: 6.1
Subsidiary Risk: P
Packing Group: II
Marine Pollutant No information available
EMS: F-A
Special Provisions 279
Description UN3451, Toluidines, solid, 6.1, II, Marine pollutant

RID

UN Number UN3451
Proper Shipping Name: Toluidines, solid
Transport hazard class(es) 6.1
Subsidiary Risk: No information available
Packing group II
Special Provisions 279
Description: UN3451, Toluidines, solid, 6.1, II, ENVIRONMENTALLY HAZARDOUS

ICAO (air)

UN-No: UN3451
Proper Shipping Name: Toluidines, solid
Hazard Class 6.1
Subsidiary Risk: No information available
Packing Group: II

Description: UN3451, Toluidines, solid, 6.1, II
Special Provisions A113

IATA

UN Number UN3451
Proper Shipping Name: Toluidines, solid
Transport hazard class(es) 6.1
Subsidiary Risk: No information available
Packing group II
Precautionary Statements - Response 6L
Special Provisions No information available
Description: UN3451, Toluidines, solid, 6.1, II

15. REGULATORY INFORMATION

International Inventories

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia (AICS)	EINECS-No.
<i>p-Toluidine</i>	106-49-0	PresentACTIV E	Present KE-23448	Present	Present (3)-186	Present	Present	Present 203-403-1

U.S. Regulations

p-Toluidine

- Massachusetts RTK:** Present
- New Jersey RTK Hazardous Substance List:** 1622
- New Jersey - Discharge Prevention - List of Hazardous Substances:** Present
- Pennsylvania RTK:** Present
- Minnesota - Hazardous Substance List:** Present
- New York Release Reporting - List of Hazardous Substances:**
100 lb RQ
1 lb RQ
- Louisiana Reportable Quantity List for Pollutants:** Listed
- California Directors List of Hazardous Substances:** Present

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>p-Toluidine</i>	106-49-0	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>p-Toluidine</i>	106-49-0	100 lb final RQ 45.4 kg final RQ	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
p-Toluidine	106-49-0	Not Applicable	Not Applicable

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

Component
p-Toluidine
106-49-0 (100)

WHMIS 2015 Hazard Classification
Acute toxicity - Oral - Category 4: H302 Harmful if swallowed.;
Acute toxicity - Dermal - Category 3: H311 Toxic in contact with skin.;
Serious Eye Damage/Eye Irritation - Category 2A: H319 Causes serious eye irritation.;
Skin sensitizers - Category 1B: H317 May cause allergic skin reaction.;
Carcinogenicity - Category 2: H351 Suspected of causing cancer.

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

DSL/NDSL

Component	CAS No	Canada (DSL)	Canada (NDSL)
p-Toluidine	106-49-0	Present	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
p-Toluidine	106-49-0	Not listed
Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
p-Toluidine	106-49-0	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Component	CAS No	EU GHS - SV - CLP (1272/2008)
p-Toluidine	106-49-0	Acute toxicity - Oral - Acute Tox. 3: H301 Toxic if swallowed. (Minimum classification); Acute toxicity - Dermal - Acute Tox. 3: H311 Toxic in contact with skin. (Minimum classification); Acute toxicity - Inhalation - Acute Tox. 3: H331 Toxic if inhaled. (Minimum classification); Serious Eye Damage/Eye Irritation - Eye Irrit. 2: H319 Causes serious eye irritation.; Skin sensitizers - Skin Sens. 1: H317 May cause allergic skin reaction.; Carcinogenicity - Carc. 2: H351 Suspected of causing cancer.; Hazardous to aquatic environment - acute hazard - Aquatic Acute 1: H400 Very toxic to aquatic life.612-160-00-4

EU - CLP (1272/2008)

R-phrases

R36 - Irritating to eyes
 R40 - Limited evidence of a carcinogenic effect
 R43 - May cause sensitization by skin contact
 R50 - Very toxic to aquatic organisms
 R23/24/25 - Toxic by inhalation, in contact with skin and if swallowed

S -phrase(s)

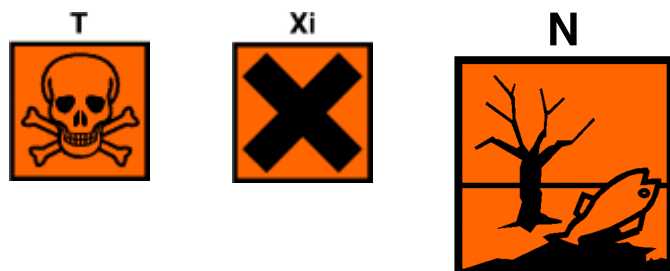
S28 - After contact with skin, wash immediately with plenty of water
 S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
 S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.
 S 1/2 - Keep locked up and out of the reach of children.
 S36/37 - Wear suitable protective clothing and gloves

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
p-Toluidine	106-49-0	T; R23/24/25 Xi; R36 Carc.Cat.3; R40 R43 N; R50	No information	

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

Indication of danger:

T - Toxic
 Xi - Irritant
 N - Dangerous for the environment



16. OTHER INFORMATION

Preparation Date: 04/23/2015
 Revision date 04/11/2019
 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