SAFETY DATA SHEET

Preparation Date: 01/06/2015 **Revision Date:** Not Applicable **Revision Number:** Not Applicable

Product identifier

Product code: AM164
Product Name: 4-Aminopyridine

Other means of identification

Synonyms: No information available
CAS #: 504-24-5
RTECS # US1750000
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)

Acute toxicity - Oral	Category 2
Acute toxicity - Dermal	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

Label elements

Danger

Hazard statements
Fatal if swallowed
Toxic in contact with skin
Causes skin irritation
Causes serious eye irritation
Causes damage to organs
Causes damage to organs through prolonged or repeated exposure

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Toxic to aquatic life
Toxic to aquatic life with long lasting effects

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

Precautionary Statements - Response
Specific treatment (see .? on this label)
Specific treatment (see .? on this label)
IF exposed: Call a POISON CENTER or doctor/physician
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 soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

Precautionary Statements - Storage
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 %	Trade Secret
4-Aminopyridine 504-24-5	504-24-5	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. Toxic in contact with skin.

Eye Contact: Flush eye 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. Call a physician or Poison Control Center immediately. Toxic if swallowed.

Most important symptoms and effects, both acute and delayed

Symptoms Causes eye irritation. Eye contact may result in redness or pain. Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scaling. Toxic in contact with skin. May be fatal if swallowed. May cause central nervous system effects.

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 (CO2). Water spray.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon oxides, Nitrogen oxides

Specific hazards: Container explosion may occur under fire conditions or when heated
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard

Special Protective Actions for Firefighters

Specific Methods: Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out. Dike fire-control water for later disposal; do not scatter the material.

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. Use personal protective equipment. Remove all sources of ignition. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions Environmental hazard. 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. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). 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. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice:
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. 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. Hygroscopic. Store under inert gas.

Incompatible Materials:
Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL

4-Aminopyridine - 504-24-5	None	None	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
4-Aminopyridine - 504-24-5	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
4-Aminopyridine 504-24-5	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: Safety glasses. Safety glasses with side-shields.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid.

Appearance:
Crystals. Powder.

Color:
White. Pale yellow to reddish-amber.

Odor:
Odorless.

Taste
No information available

Molecular/Formula weight:
94.12

Formula:
C5H6N2

Flammability:
No information available

Flash point (°C):
No data available

Flashpoint (°C/°F):
164°C/327°F

Flash Point Tested according to:
Not available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Autoignition Temperature (°C/°F):
No information available

pH:
No information available

Melting point/range(°C/°F):
157.0°-162.0°C/314.6°-323.6°F

Boiling point/range(°C/°F):
287°C/549°F

Decomposition temperature(°C/°F):
No information available

Bulk density:
No information available

Specific gravity:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Density (g/cm3):
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):
-0.76

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Soluble in Water
Soluble in Ethanol
Slightly soluble in Ether

10. STABILITY AND REACTIVITY

Reactivity
Reactive with oxidizing agents

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. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Exposure to moisture.

Incompatible Materials: Oxidizing agents.

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:
Eyes. Ingestion. Inhalation. Skin.

Acute Toxicity

Component Information

4-Aminopyridine - 504-24-5

LD50/oral/rat = = 21 mg/kg Oral LD50 Rat
LD50/oral/mouse = 19 mg/kg
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = 4 mg/kg, intracerebral, mouse;
10 mg/kg, intraperitoneal, mouse;
6500 µg/kg, intraperitoneal, rat;
7 mg/kg, intravenous, mouse;
5500 µg/kg, intravenous, rabbit;
3 mg/kg, oral, dog;
4200 mg/kg, oral, duck;
590 µg/kg, oral, man, LDLo;
6 mg/kg, oral, pigeon;
7650 µg/kg, oral, quail;
326 mg/kg, oral, rabbit;
2370 µg/kg, oral, wild bird species;
20 mg/kg, subcutaneous, mouse;
19 mg/kg, subcutaneous, rat

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 20mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = 19mg/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: Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scaling. Toxic in contact with skin.

Eye Contact: Causes serious eye irritation.

Inhalation May cause irritation of respiratory tract.
Ingestion May be fatal if swallowed.

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: No information available

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
4-Aminopyridine	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

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: Nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

4-Aminopyridine - 504-24-5
Freshwater Fish Species Data: 2.3 - 3.5 mg/L LC50 Lepomis macrochirus 96 h static 1

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
4-Aminopyridine	None	None	P008	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN2671
Proper Shipping Name: Aminopyridines
Hazard Class: 6.1
Subsidiary Risk:
Packing Group: II
ERG No: 153
Marine Pollutant No data available
DOT RQ (lbs): No information available
Symbol(s): R4

TDG (Canada)

UN-No: UN2671
Proper Shipping Name: Aminopyridines
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

ADR

UN-No: UN2671
Proper Shipping Name: Aminopyridines
Hazard Class: 6.1
Packing Group: II
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN2671
Proper Shipping Name: Aminopyridines
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
Description: No information available
IMDG Page: No information available
Marine Pollutant No information available
EMS: F-A
MFAG: No information available

14. TRANSPORT INFORMATION

Maximum Quantity: No information available

RID

UN-No: UN2671
Proper Shipping Name: Aminopyridines
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN2671
Proper Shipping Name: Aminopyridines
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

IATA

UN-No: UN2671
Proper Shipping Name: Aminopyridines
Hazard Class: 6.1
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 6L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
4-Aminopyridine	Present	Present KE-29927	Present	Present (5)-724 (9)-153	Present	Present	Present 207-987-9

U.S. Regulations

4-Aminopyridine

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 0172
New Jersey (EHS) List: 0172 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
New York Release Reporting - List of Hazardous Substances:
1000 lb RQ
1 lb RQ
Louisana Reportable Quantity List for Pollutants: 1000lbfinal RQ
454kgfinal RQ
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)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
4-Aminopyridine	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 *de minimis*
4-Aminopyridine	1000 lb final RQ 454 kg final RQ	500 lb lower TPQ 10000 lb upper TPQ	None	None	None

U.S. TSCA

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

Canada

WHMIS hazard class:
D1A Very toxic materials
D1B Toxic materials
D2B Toxic materials

4-Aminopyridine
D1A E

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

Inventory

Components	Canada (DSL)	Canada (NDSL)
4-Aminopyridine	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
4-Aminopyridine	Not listed	Not listed

EU Classification

R-phrase(s)
not determined (not applicable)

S -phrase(s)
none

Components	Classification	Concentration Limits:	Safety Phrases
4-Aminopyridine		No information	

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

Indication of danger:
None.

16. OTHER INFORMATION

Preparation Date: 01/06/2015
Revision Date: Not Applicable
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