SAFETY DATA SHEET

Preparation Date: 7/6/15 **Revision Date:** 7/6/15 **Revision Number:** G1

1. IDENTIFICATION

Product identifier

Product code: P1450
Product Name: PYRIDINE, REAGENT, ACS

Other means of identification

Synonyms: Azabenzene
Azine
Piridina (Spanish)
CAS #: 110-86-1
RTECS # UR8400000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Solvent. Chemical intermediate.
Uses advised against No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000
Order Online At: https://www.spectrumchemical.com

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

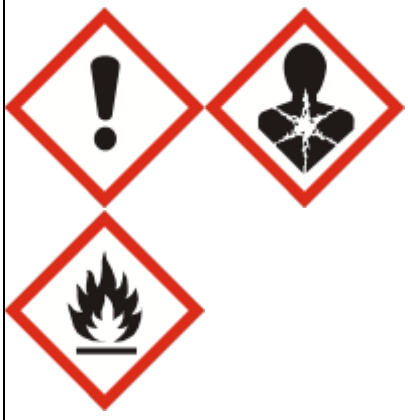
Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Specific target organ toxicity (repeated exposure)	Category 2
Flammable liquids	Category 2

Label elements

Danger

Hazard statements
Harmful if swallowed
Harmful in contact with skin
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
May cause damage to organs through prolonged or repeated exposure
Highly flammable liquid and vapor



Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
May be harmful if inhaled

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Contaminated work clothing must not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/ .? /equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Wear protective gloves

Precautionary Statements - Response
Specific measures (see .? on this label)
Specific treatment (see .? on this label)
Get medical advice/attention if you feel unwell
In case of fire: Use CO2, dry chemical, or foam to extinguish.
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.
Call a POISON CENTER or doctor/physician if you feel unwell
If skin irritation or rash occurs: Get medical advice/attention
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 person to fresh air and keep comfortable for breathing. 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

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Pyridine 110-86-1	110-86-1	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222

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

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction. May affect the liver. It may affect the kidneys. Central nervous system effects. Central nervous system depression. May cause headache. Somnolence. Drowsiness. Fatigue. Insomnia. anesthetic. Coughing and wheezing. Weakness. May cause abdominal pain, nausea, vomiting, diarrhea. Dyspnea (Shortness of breath and difficulty breathing).

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: Carbon dioxide (CO2). Dry chemical. Alcohol-resistant foam. Water spray.

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. Nitrogen oxides. When Pyridine is heated to decomposition, hydrogen cyanide fumes may be released.

Specific hazards: Flammable
May be ignited by heat, sparks or flames
Vapor may travel considerable distance to source of ignition and flash back
Vapors may form explosive mixtures with air
Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks)
Container explosion may occur under fire conditions or when heated
Fire may produce irritating, corrosive and/or toxic gases

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.

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. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not let this chemical enter the environment. Prevent entry into waterways, sewers, basements or confined areas. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods and material for containment and cleaning up

Methods for containment Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. 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. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. 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. Keep away from heat and sources of ignition. When using do not smoke. Do not breathe vapors or spray mist. Do not ingest. 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. Keep away from heat and sources of ignition. Store in a segrated and approved area. Store away from incompatible materials.

Incompatible Materials:
Oxidizing agents. Chloroformates. chromium trioxide . Iodine. Oleum. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Pyridine 110-86-1	5 ppm TWA 15 mg/m^3 TWA	5 ppm TWA 15 mg/m^3 TWA	1 ppm TWA	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Pyridine 110-86-1	1 ppm TWA 3.2 mg/m^3 TWA	1 ppm TWA	1 ppm TWA	5 ppm TWAEV 16 mg/m^3 TWAEV

Australia and Mexico

Components	Australia	Mexico
Pyridine 110-86-1	16 mg/m^3 TWA 5 ppm TWA	5 ppm TWA 15 mg/m^3 TWA 10 ppm STEL 30 mg/m^3 STEL

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles

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

Respiratory protection: Vapor respirator. 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:
Liquid

Appearance:
No information available

Color:
Colorless. Light yellow.

Odor:
Sharp. Nauseating. Fish-like.

Taste
Amine.

Formula:
C5-H5-N

Molecular/Formula weight:
79.10 g/mole

Flammability:
Highly flammable

Flashpoint (°C/°F):
20 °C/68 °F

Flash Point Tested according to:
Closed cup

Autoignition Temperature (°C/°F):
482 °C/900 °F

Lower Explosion Limit (%):
1.8%

Upper Explosion Limit (%):
12.4%

pH:
No information available

Melting point/range(°C/°F):
-41.6 °C/-42.88 °F

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

Boiling point/range(°C/°F):
115.3 °C/239.5 °F

Bulk density:
No information available

Density (g/cm3):
0.9780 g/mL

Specific gravity:
0.98272

Vapor pressure @ 20°C (kPa):
2.4 @ 20 °C
2.67 @ 25 °C

Evaporation rate:
No information available

Vapor density:
0.982

VOC content (g/L):
978

Odor threshold (ppm):
0.66

Partition coefficient (n-octanol/water):
0.65

Viscosity:
No information available

Miscibility:
Miscible with water
Miscible with Ether
Miscible with alcohol
Miscible with Petroleum Ether
Miscible with oils

Solubility:
No information available

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents
Reactive with acids
Reacts violently with chlorosulfonic acid, chromic acid, maleic anhydride, nitric acid, fuming sulfuric acid, perchromates, beta-propiolactone, silver perchlorate, and sulfuric acid. Contact with strong acids will cause violent splattering. Can react vigorously with oxidizing materials. Pyridine causes maleic anhydride to decompose exothermically. Forms a highly explosive by product with trifluoromethyl hypofluorite in reactions where used as an acid-acceptor.

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. Chloroformates. chromium trioxide . Iodine. Oleum. Acids.

Hazardous decomposition products: cyanide fumes.

Other Information

Corrosivity: Non-corrosive in the presence of glass

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Skin. Inhalation.

Acute Toxicity

Component Information

Pyridine - 110-86-1

LD50/oral/rat = 891 mg/kg Oral LD50 Rat (LOLI)
LD50/oral/mouse = 1500 mg/kg Oral LD50 Mouse(RTECS)
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = 28500 mg/m^3 Inhalation LC50 Rat 1 h
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = 1000 mg/kg Dermal LD50 Guinea Pig (RTECS)

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 891mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = 1500mg/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 = 28500mg/m^3 (1-hr)
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. Harmful if absorbed through skin. It may be absorbed through the skin. If absorbed through skin it may cause systemic effects with symptoms similar to those of ingestion. May cause allergic skin reaction.

Eye Contact: Causes serious eye irritation. May cause eye injury. May cause corneal injury.

Inhalation May cause respiratory tract irritation. May cause dyspnea (difficulty breathing or shortness of breath). Symptoms may include coughing and wheezing. May cause nausea and headache. May cause abdominal pain. May cause diarrhea. May affect behavior/central nervous system. May cause central nervous system depression. May affect behavior/central nervous system (somnolence). May cause weakness. May affect behavior/central nervous system (irritability, insomnia). May affect behavior/central nervous system (confusion). May cause lightheadedness.

Ingestion Harmful if swallowed. May cause anorexia. Ingestion may cause nausea, vomiting, diarrhea. May cause abdominal pain. It may affect the kidneys and liver. May cause central nervous system effects (affect behavior). May affect behavior/central nervous system (somnolence). May affect behavior/central nervous system (tremors). May affect behavior/central nervous system (general anesthetic). May cause headache. May cause weakness. May cause fatigue.

Ingestion: May cause insomnia, nervousness

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 cause central nervous system effects. Chronic exposure may cause nausea, abdominal pain, diarrhea, headache, insomnia, nevousness, and weakness. Chronic exposure may affect the liver and kidneys. Prolonged or repeated inhalation may affect the bone marrow (changes in bone marrow). Prolonged or repeated ingestion may affect the blood (changes in serum composition). Prolonged or repeated ingestion may affect the blood (change in clotting factors). Skin: Sensitizer. May cause allergic skin reaction (allergic contact dermatitis).

Sensitization: May cause sensitization by skin contact

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

Carcinogenic effects: Not classifiable as to its carcinogenicity to humans.

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Pyridine	Group 3 - Monograph 77 [2000]	A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)
IARC (International Agency for Research on Cancer)
Group 3 - Not classifiable as to its carcinogenicity to humans

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 May cause damage to organs through prolonged or repeated exposure.
Target Organs: Central nervous system. Kidneys. Liver.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Pyridine - 110-86-1
Freshwater Algae Data: 520 mg/L EC50 Tetrahymena pyriformis 24 h
Freshwater Fish Species Data: 63.4 - 73.6 mg/L LC50 Pimephales promelas 96 h flow-through 1
26 mg/L LC50 Cyprinus carpio 96 h semi-static 1
4.6 mg/L LC50 Oncorhynchus mykiss 96 h static 1
Water Flea Data: 520 mg/L EC50 Daphnia magna 24 h

Persistence and degradability: No information available

Bioaccumulative potential: Potential for bioconcentration in aquatic organisms is moderate.

Mobility: It is expected to have moderate mobility based upon estimated Koc.

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
Pyridine	None	None	None	U196

14. TRANSPORT INFORMATION

DOT
UN-No: UN1282
Proper Shipping Name: Pyridine
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
ERG No: 129
Marine Pollutant No data available
DOT RQ (lbs): 1000
Special Provisions No Information available
Symbol(s): R4

TDG (Canada)

14. TRANSPORT INFORMATION

UN-No: UN1282
Proper Shipping Name: Pyridine
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant No Information available

ADR

UN-No: UN1282
Proper Shipping Name: Pyridine
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available

IMO / IMDG

UN-No: UN1282
Proper Shipping Name: Pyridine
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant No information available
EMS: F-E

RID

UN-No: UN1282
Proper Shipping Name: Pyridine
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: II

ICAO

UN-No: UN1282
Proper Shipping Name: Pyridine
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II

IATA

UN-No: UN1282
Proper Shipping Name: Pyridine
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 3L
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.
Pyridine	Present	Present KE-29929	Present	Present (5)-710	Present	Present	Present 203-809-9

U.S. Regulations

Pyridine

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 1624
New Jersey (EHS) List: 1624 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
Minnesota - Hazardous Substance List: Present
New York Release Reporting - List of Hazardous Substances:
1 lb RQ
Louisana Reportable Quantity List for Pollutants: 1000lbfinal RQ
454kgfinal RQ
California Directors List of Hazardous Substances: Present

FDA - Direct Food Additives 21 CFR 172.515
FDA - 21 CFR - Total Food Additives 172.515 177.1580 177.1585

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:
Pyridine	carcinogen	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
Pyridine	1000 lb final RQ 454 kg final RQ	None	None	None	1.0 % de minimis concentration

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Pyridine	Not Applicable	10/04/1982 10/04/1992

Canada

WHMIS hazard class:
B2 Flammable liquid
D2B Toxic materials

Pyridine
B2 D2B

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 -
Pyridine	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Pyridine	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances
Pyridine	Not listed

Components	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Pyridine	Not listed

EU Classification

R-phrase(s)

R11 - Highly flammable.
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed.

S -phrase(s)

S 2 - Keep out of the reach of children.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 - After contact with skin, wash immediately with plenty of water

Components	Classification	Concentration Limits:	Safety Phrases
Pyridine	F; R11 Xn; R20/21/22	5%<=C: Xn; R20/21/22	S2 S26 S28

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

Indication of danger:

Xn - Harmful.
Flammable

16. OTHER INFORMATION

16. OTHER INFORMATION

Preparation Date: 7/6/15
Revision Date: 7/6/15
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