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MATERIAL SAFETY DATA SHEET (MSDS)

PYRIDINE LR

1. Product Identification

Synonyms: Azabenzene; Azine
CAS No.: 110-86-1

Product Coad: SS0104802500
Molecular Weight: 79.10
Chemical Formula: C₅H₅N

2. Composition/Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
110-86-1	Pyridine	100	203-809-9

3. Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless to light yellow liquid. Flash Point: 17 deg C.

Danger! Causes severe eye and skin irritation with possible burns. **Flammable liquid and vapor.** Causes respiratory tract irritation. Stench. May be harmful if swallowed, inhaled, or absorbed through the skin. May cause central nervous system depression.

Target Organs: Blood, kidneys, central nervous system, liver, eyes, skin, mucous membranes.

Potential Health Effects

Eye: Contact with eyes may cause severe irritation, and possible eye burns.

Skin: May cause skin irritation. May be harmful if absorbed through the skin. Effects may be delayed. May cause smarting of the skin and first-degree burns on short exposure. Substance is readily absorbed through the skin. Pyridine was determined not to be a skin sensitizer in guinea pigs.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May cause effects similar to those for inhalation exposure. Effects may be delayed.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation. Prolonged exposure may result in dizziness and general weakness. Other symptoms reported with acute exposure to pyridine include nervousness, insomnia, and loss of appetite.

Chronic: Prolonged or repeated skin contact may cause dermatitis. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. May cause liver and kidney damage. Exposures to doses of pyridine that are too low to produce overt clinical symptoms can cause liver damage and repeated low-level exposures can cause cirrhosis. Feeding studies in rats produced blood effects like changes in clotting factors.

4. First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid immediately.

Skin: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

5. Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media: Solid streams of water may be ineffective and spread material. Use water spray,

dry chemical, "alcohol resistant" foam, or carbon dioxide.

Flash Point: 17 deg C (62.60 deg F)

Autoignition Temperature: 482 deg C (899.60 deg F)

Explosion Limits, Lower:1.8%

Upper: 12.4%

NFPA Rating: (estimated) Health: 3; Flammability: 3; Instability: 0

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6. Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Prevent spreading of vapors through sewers, ventilation systems and confined areas. Evacuate unnecessary personnel. Approach spill from upwind. Use water spray to cool and disperse vapors, protect personnel, and dilute spills to form nonflammable mixtures. Control runoff and isolate discharged material for proper disposal.

7. Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Do not breathe vapor. Use only with adequate ventilation.

Storage: Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Isolate from oxidizing materials and acids.

8. Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Pyridine	1 ppm TWA	5 ppm TWA; 15 mg/m ³ TWA 1000 ppm IDLH	5 ppm TWA; 15 mg/m ³ TWA

OSHA Vacated PELs: Pyridine: 5 ppm TWA; 15 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles and face shield.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. Physical and Chemical Properties

Physical State: Liquid

Appearance: colorless to light yellow

Odor: strong odor - fish-like - penetrating odor - nauseating - stench

pH: 8.5 (0.2 M aq soln)

Vapor Pressure: 18 mm Hg @ 20 deg C

Vapor Density: 2.73 (Air=1)

Evaporation Rate: Not available.

Viscosity: 0.95 mPa s 20 deg C

Boiling Point: 115 deg C

Freezing/Melting Point: -42 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: 9780

Molecular Formula: C₅H₅N

Molecular Weight: 79.1

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Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Ignition sources, excess heat, confined spaces.

Incompatibilities with Other Materials: Strong oxidizing agents, acids.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

RTECS#:

CAS# 110-86-1: UR8400000

LD50/LC50:

CAS# 110-86-1:

Dermal, guinea pig: LD50 = 1 gm/kg;

Draize test, rabbit, skin: 500 mg/24H Mild;

Inhalation, rat: LC50 = 28500 mg/m³/1H;

Oral, mouse: LD50 = 1500 mg/kg;

Oral, rat: LD50 = 891 mg/kg;

Skin, rabbit: LD50 = 1121 mg/kg;

Inhalation, rat: LC50 = 28500 mg/m³/1H; Skin, guinea pig: LD50 = 1 gm/kg.

Carcinogenicity:

CAS# 110-86-1:

ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans

California: carcinogen, initial date 5/17/02

NTP: Not listed.

IARC: Not listed.

Epidemiology: No information found

Teratogenicity: Pyridine caused muscle/skeletal effects when injected into developing chickens but was not teratogenic in frogs at sublethal doses. The relevance of these studies to human reproduction is unclear.

Reproductive Effects: No information found

Mutagenicity: Pyridine's mutagenicity potential is equivocal. It was reported to be both positive and negative in Salmonella typhimurium strains. It was not mutagenic in tests for chromosome aberrations, but did give weak positive results in tests that detect sister chromatid exchanges.

Neurotoxicity: No information found

Other Studies:

12. Ecological Information

Ecotoxicity: Fish: Fathead Minnow: 106mg/L; 96H; Flow-through No data available.

Environmental: Terrestrial: Should have very high mobility. It is adsorbed to acid clay to a moderate extent. Complete degradation in one soil occurred in less than 8 days. Aquatic: Should biodegrade after an acclimation period and can also be lost through volatilization. Atmospheric: Exists in the vapor phase based on a vapor pressure of 20.80 mm Hg and react slowly with photochemically produced hydroxy radicals with experimental half-lives of 32 and 16 days in clean and moderately polluted atmospheres, respectively. Bioconcentration in aquatic organisms should not be significant.

Physical: No information available.

Other: No information available.

13. Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series:

CAS# 110-86-1: waste number U196.

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14. Transport Information

	US DOT	Canada TDG
Shipping Name:	PYRIDINE	PYRIDINE
Hazard Class:	3	3
UN Number:	UN1282	UN1282
Packing Group:	II	II
Additional Info:		FLASHPOINT 17C

15. Regulatory Information

US FEDERAL

TSCA

CAS# 110-86-1 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 110-86-1: Effective 10/4/82, Sunset 10/4/92

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 110-86-1: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 110-86-1: immediate, delayed, fire.

Section 313

This material contains Pyridine (CAS# 110-86-1, 100%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 110-86-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Pyridine, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN F

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MATERIAL SAFETY DATA SHEET (MSDS)**PYRIDINE LR****Risk Phrases:**

R 11 Highly flammable.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 28A After contact with skin, wash immediately with plenty of water

WGK (Water Danger/Protection)

CAS# 110-86-1: 2

Canada - DSL/NDSL

CAS# 110-86-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 110-86-1 is listed on the Canadian Ingredient Disclosure List.

16. Other Information

Product Use: Laboratory Reagent.

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

DISCLAIMER:

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

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