

## MATERIAL SAFETY DATA SHEET

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Version 1.19

## Section 1 - Product and Company Information

Product Name PYRIDINE, ACS REAGENT, >=99%  
Product Number 360570  
Brand SIAL

Company Sigma-Aldrich  
Address 3050 Spruce Street  
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832  
Fax: 800-325-5052  
Emergency Phone: 314-776-6555

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
PYRIDINE	110-86-1	Yes

Formula C5H5N  
Synonyms Azabenzene \* Azine \* NCI-C55301 \* Piridina  
(Italian) \* Pirydyna (Polish) \* Pyridin (German)  
\* Pyridine (ACGIH:OSHA) \* RCRA waste number U196  
RTECS Number: UR8400000

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU). Harmful.  
Harmful by inhalation, in contact with skin and if swallowed. Risk  
of serious damage to eyes.  
Calif. Prop. 65 carcinogen. Readily absorbed through skin. Target  
organ(s): Liver. Kidneys.

## HMIS RATING

HEALTH: 2\*  
FLAMMABILITY: 3  
REACTIVITY: 0

## NFPA RATING

HEALTH: 2  
FLAMMABILITY: 3  
REACTIVITY: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is  
conscious. Call a physician immediately.

#### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

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### Section 5 - Fire Fighting Measures

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#### FLAMMABLE HAZARDS

Flammable Hazards: Yes

#### EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions. Forms explosive mixtures in air.

#### FLASH POINT

68 °F 20 °C Method: closed cup

#### EXPLOSION LIMITS

Lower: 1.8 % Upper: 12.4 %

#### AUTOIGNITION TEMP

482 °C

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s): Emits toxic fumes under fire conditions.

Vapor may travel considerable distance to source of ignition and flash back.

Specific Method(s) of Fire Fighting: Use water spray to cool fire-exposed containers.

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### Section 6 - Accidental Release Measures

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#### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.



Property	Value	At Temperature or Pressure
Molecular Weight	79.1 AMU	
pH	8.5	
BP/BP Range	115 °C	760 mmHg
MP/MP Range	- 42.0 °C	
Freezing Point	- 42.0 °C	
Vapor Pressure	20 mmHg	25 °C
Vapor Density	2.72 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.978 g/cm3	
Bulk Density	N/A	
Odor Threshold	< 1 ppm	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	Log Kow: 0.65	
Decomposition Temp.	N/A	
Flash Point	68 °F 20 °C	Method: closed cup
Explosion Limits	Lower: 1.8 % Upper: 12.4 %	
Flammability	N/A	
Autoignition Temp	482 °C	
Refractive Index	1.51	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:Soluble.	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions to Avoid: Heat.

Materials to Avoid: Strong oxidizing agents, Strong acids.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, and nitrogen oxides, Cyanides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: Harmful if absorbed through skin. Readily absorbed through skin.

Eye Contact: Causes severe eye irritation.

Inhalation: Harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

### TARGET ORGAN(S) OR SYSTEM(S)

Bone marrow. Liver. Kidneys. Nerves.

## SIGNS AND SYMPTOMS OF EXPOSURE

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Dose-related side effects may include: anorexia, nausea, vomiting, headache, dizziness, tachycardia, nervousness, insomnia, skin disorders

## TOXICITY DATA

Oral

Rat

891 mg/kg

LD50

Skin

Rabbit

1,121 mg/kg

LD50

Inhalation

Rat

9,015 ppm

LC50

Oral

Mouse

1,500 mg/kg

LD50

Oral

Rat

891 mg/kg

LD50

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Ptosis. Behavioral: Somnolence (general depressed activity). Behavioral: Coma.

Inhalation

Rat

28,500 mg/m<sup>3</sup>

LC50

Remarks: Behavioral: Somnolence (general depressed activity). Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Lacrimation. Lungs, Thorax, or Respiration: Dyspnea.

Intraperitoneal

Rat

866 MG/KG

LD50

Subcutaneous

Rat

866 MG/KG

LD50

Intravenous

Rat

360 MG/KG

LD50

Remarks: Behavioral: Sleep. Behavioral: Somnolence (general depressed activity). Lungs, Thorax, or Respiration: Dyspnea.

Oral

Mouse

1500 mg/kg

LD50

Remarks: Behavioral:Sleep. Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea.

Intraperitoneal  
Mouse  
950 MG/KG  
LD50

Subcutaneous  
Mouse  
1250 MG/KG  
LD50  
Remarks: Behavioral:Sleep. Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea.

Intravenous  
Mouse  
420 MG/KG  
LD50  
Remarks: Lungs, Thorax, or Respiration:Dyspnea.  
Behavioral:Somnolence (general depressed activity).  
Behavioral:Sleep.

Intravenous  
Dog  
880 MG/KG  
LD50  
Remarks: Cardiac: Change in rate. Vascular:BP lowering not characterized in autonomic section. Lungs, Thorax, or Respiration:Respiratory depression.

Skin  
Rabbit  
1121 mg/kg  
LD50  
Remarks: Behavioral:Ataxia. Gastrointestinal:Changes in structure or function of salivary glands. Liver:Other changes.

Skin  
Guinea pig  
1000 mg/kg  
LD50

Oral  
Mammal  
1500 mg/kg  
LD50

Inhalation  
Mammal  
10,000 mg/m<sup>3</sup>  
LC50

#### IRRITATION DATA

Eyes  
Rabbit  
90 %  
24 HR  
Remarks: Application of 90% solution resulted in severe reaction with clouding of the cornea and scarring of the conjunctiva. Permanent mild stromal opalescence and subepithelial vascularization occurred.

Skin  
Rabbit  
500 mg  
24H  
Remarks: Mild irritation effect

#### CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Species: Rat  
Route of Application: Oral  
Dose: 24024 MG/KG  
Exposure Time: 2Y  
Frequency: C  
Result: Tumorigenic:Neoplastic by RTECS criteria. Kidney, Ureter, Bladder:Tumors.

Species: Mouse  
Route of Application: Oral  
Dose: 25480 MG/KG  
Exposure Time: 2Y  
Frequency: C  
Result: Tumorigenic:Carcinogenic by RTECS criteria. Liver:Tumors.

#### IARC CARCINOGEN LIST

Rating: Group 3

#### NTP CARCINOGEN LIST

Rating: Clear evidence.  
Species: Mouse  
Route: Drinking

#### ACGIH CARCINOGEN LIST

Rating: A3

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### Section 12 - Ecological Information

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#### ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish  
Species: Pimephales promelas (Fathead minnow)  
Time: 96 h  
Value: 93.8 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h  
Value: 940 mg/l

Test Type: LC50 Fish  
Species: Cyprinus carpio  
Time: 96 h  
Value: 26 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h

Value: 1,140 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia pulex  
Time: 48 h  
Value: 520 mg/l

Test Type: EC50 Algae  
Species: SELENASTRUM  
Time: 72 h  
Value: 100.0 - 180.0 mg/l

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### Section 13 - Disposal Considerations

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#### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

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### Section 14 - Transport Information

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#### DOT

Proper Shipping Name: Pyridine  
UN#: 1282  
Class: 3  
Packing Group: Packing Group II  
Hazard Label: Flammable liquid  
PIH: Not PIH

#### IATA

Proper Shipping Name: Pyridine  
IATA UN Number: 1282  
Hazard Class: 3  
Packing Group: II

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### Section 15 - Regulatory Information

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#### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F-Xn  
Indication of Danger: Highly Flammable. Harmful.  
R: 11-20/21/22  
Risk Statements: Highly flammable. Harmful by inhalation, in contact with skin and if swallowed.  
S: 26-28  
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap-suds.

#### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU). Harmful.  
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Risk of serious damage to eyes.  
Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.  
US Statements: Calif. Prop. 65 carcinogen. Readily absorbed through skin. Target organ(s): Liver. Kidneys.



UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes

DEMINIMIS: 1 %

NOTES: This product is subject to SARA section 313 reporting requirements.

TSCA INVENTORY ITEM: Yes

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause cancer.

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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Section 16 - Other Information

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DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.