

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Phenylhydrazine

Product Number : P26252
Brand : Aldrich

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
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Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Combustible Liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Skin sensitiser, Irritant, Carcinogen, Mutagen

Target Organs

Blood, Liver, Kidney

WHMIS Classification

B3	Combustible Liquid	Combustible Liquid
D1A		Highly toxic by inhalation
D1B		Toxic by ingestion
		Toxic by skin absorption

GHS Classification

Flammable liquids (Category 4)
Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitization (Category 1)
Germ cell mutagenicity (Category 2)
Carcinogenicity (Category 1B)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)
H227

Combustible liquid

H301 + H311 Toxic if swallowed or in contact with skin
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H331 Toxic if inhaled.
 H341 Suspected of causing genetic defects.
 H350 May cause cancer.
 H400 Very toxic to aquatic life.

Precautionary statement(s)

P201 Obtain special instructions before use.
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing.
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P311 Call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard: 2
Chronic Health Hazard: *
Flammability: 2
Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 2
Reactivity Hazard: 0

Potential Health Effects

Inhalation Toxic if inhaled. Causes respiratory tract irritation.
Skin Toxic if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₆H₈N₂
 Molecular Weight : 108.14 g/mol

Component	Concentration
Phenylhydrazine	
CAS-No. 100-63-0	-
EC-No. 202-873-5	
Index-No. 612-023-00-9	

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Light sensitive. Store under inert gas. Air sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Phenylhydrazine	100-63-0	C	0.14 ppm 0.6 mg/m ³	USA. NIOSH Recommended Exposure Limits
Remarks	Potential Occupational Carcinogen See Appendix A Potential for dermal absorption 2 hour ceiling value			
		TWA	0.1 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Upper Respiratory Tract & skin irritation Anemia Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption			
		TWA	5 ppm 20 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			

		STEL	10 ppm 45 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			
		TWA	5 ppm 22 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Skin designation The value in mg/m ³ is approximate.			

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid
Colour no data available

Safety data

pH no data available
Melting point/freezing point Melting point/range: 18 - 21 °C (64 - 70 °F)
Boiling point 238 - 241 °C (460 - 466 °F)
Flash point 89 °C (192 °F) - closed cup
Ignition temperature 174 °C (345 °F)
Autoignition temperature no data available
Lower explosion limit 1.1 %(V)
Vapour pressure 1.35 hPa (1.01 mmHg) at 60 °C (140 °F)
Density 1.098 g/mL
Water solubility no data available
Partition coefficient: n-octanol/water no data available
Relative vapour density 4.33

Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50

LD50 Oral - rat - 188 mg/kg

Remarks: Behavioral:Excitement. Behavioral:Muscle contraction or spasticity.

Inhalation LC50

LC50 Inhalation - rat - 2,610 mg/m³

LC50 Inhalation - mouse - 2,120 mg/m³

Dermal LD50

Other information on acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

Respiratory or skin sensitization

Hazardous polymerisation may occur.

May cause allergic skin reaction.

Germ cell mutagenicity

In vitro tests showed mutagenic effects

Genotoxicity in vitro - Ames test - *S. typhimurium*

Histidine reversion (Ames)

Genotoxicity in vivo - mouse - Intraperitoneal

DNA damage

Carcinogenicity

Carcinogenicity - rat - Subcutaneous

Tumorigenic:Carcinogenic by RTECS criteria. Liver:Tumors. Skin and Appendages: Other: Tumors.

Possible human carcinogen

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Reproductive toxicity - rat - Intraperitoneal
Effects on Newborn: Behavioral.

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	Toxic if inhaled. Causes respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	Toxic if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

Liver injury may occur., Kidney injury may occur., Blood disorders

Synergistic effects

no data available

Additional Information

RTECS: MV8925000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Danio rerio (zebra fish) - 0.16 - 0.25 mg/l - 48.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 2 - 5 mg/l - 48 h
Toxicity to algae	EC50 - Desmodesmus subspicatus (green algae) - 3.2 mg/l

Persistence and degradability

Biodegradability	Biotic/Aerobic Result: 97 % - Readily biodegradable.
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Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS**Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN number: 2572 Class: 6.1 Packing group: II
 Proper shipping name: Phenylhydrazine
 Marine pollutant: No
 Poison Inhalation Hazard: No

IMDG

UN number: 2572 Class: 6.1 Packing group: II EMS-No: F-A, S-A
 Proper shipping name: PHENYLHYDRAZINE
 Marine pollutant: No

IATA

UN number: 2572 Class: 6.1 Packing group: II
 Proper shipping name: Phenylhydrazine

15. REGULATORY INFORMATION**OSHA Hazards**

Combustible Liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Skin sensitiser, Irritant, Carcinogen, Mutagen

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Phenylhydrazine	CAS-No. 100-63-0	Revision Date 1993-04-24
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Pennsylvania Right To Know Components

Phenylhydrazine	CAS-No. 100-63-0	Revision Date 1993-04-24
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New Jersey Right To Know Components

Phenylhydrazine	CAS-No. 100-63-0	Revision Date 1993-04-24
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California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Phenylhydrazine	CAS-No. 100-63-0	Revision Date 2002-09-01
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WHMIS Classification

B3 Combustible Liquid
D1A
D1B

Combustible Liquid
Highly toxic by inhalation
Toxic by ingestion
Toxic by skin absorption

16. OTHER INFORMATION**Further information**

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