

SAFETY DATA SHEET

1. PRODUCT

1.1 Product identifiers

Name: Phenylhydrazine

CAS-No.: 100-63-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 4), H227

Acute toxicity, Oral (Category 3), H301

Acute toxicity, Inhalation (Category 3), H331

Acute toxicity, Dermal (Category 3), H311

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Skin sensitisation (Category 1), H317


Germ cell mutagenicity (Category 2), H341

Carcinogenicity (Category 1B), H350

Acute aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal word	Danger
Hazard statement(s)	H227 Combustible liquid. H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H341 Suspected of causing genetic defects. H350 May cause cancer. H400 Very toxic to aquatic life.

Precautionary statement(s)	<p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.</p> <p>P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.</p> <p>P264 Wash skin thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P273 Avoid release to the environment.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.</p> <p>P302 + P352 IF ON SKIN: Wash with plenty of soap and water.</p> <p>P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P308 + P313 IF exposed or concerned: Get medical advice/ attention.</p> <p>P322 Specific measures (see supplemental first aid instructions on this label).</p> <p>P330 Rinse mouth.</p> <p>P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P337 + P313 If eye irritation persists: Get medical advice/ attention.</p> <p>P361 Remove/ Take off immediately all contaminated clothing.</p> <p>P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.</p> <p>P391 Collect spillage.</p> <p>P403 + P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P403 + P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/ container to an approved waste disposal plant.</p>
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2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula: $C_6H_8N_2$
Molecular weight: 108.14 g/mol
CAS-No.: 100-63-0
EC-No.: 202-873-5

Hazardous components

Component	Classification	Concentration
Phenylhydrazine	Flam. Liq. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; Muta. 2; Carc. 1B; Aquatic Acute 1; H227, H301 + H311 + H331, H315, H317, H319, H341, H350, H400	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of 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.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.2 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, 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.

For personal protection see section 8.

6.2 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.

6.3 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.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 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.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Phenylhydrazine	100-63-0	C	0.140000 ppm 0.600000 mg/m3	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 irritation Skin irritation Anemia Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	0.100000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Skin irritation Anemia Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	5.000000 ppm 22.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants
		Skin designation The value in mg/m3 is approximate.		
		PEL	5 ppm 20 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		
		STEL	10 ppm 45 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face 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 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. Full contact Material: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 480 min Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M) Splash contact Material: Chloroprene Minimum layer thickness: 0.6 mm Break through time: 120 min Material tested: Camapren® (KCL 722 / Aldrich Z677493, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.
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.
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).
Control of environmental exposure	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Form: liquid
Odour	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	Melting point/range: 18 - 21 °C (64 - 70 °F)
Initial boiling point and boiling range	238 - 241 °C (460 - 466 °F)
Flash point	89 °C (192 °F) - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Lower explosion limit: 1.1 %(V)
Vapour pressure	1.35 hPa (1.01 mmHg) at 60 °C (140 °F)
Vapour density	4.33
Relative density	1.098 g/mL
Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other safety information

Surface tension: 46.1 mN/m at 20 °C (68 °F)

Relative vapour density: 4.33

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Oxidizing agents

10.6 Hazardous decomposition products

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

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 188 mg/kg Remarks: Behavioral:Excitement. Behavioral:Muscle contraction or spasticity. LC50 Inhalation - Rat - 2,610 mg/m ³ LC50 Inhalation - Mouse - 2,120 mg/m ³ No data available
Skin corrosion/irritation
No data available
Serious eye damage/eye irritation
Respiratory or skin sensitisation
Hazardous polymerisation may occur.
Germ cell mutagenicity
In vitro tests showed mutagenic effects Ames test S. typhimurium Histidine reversion (Ames) Mouse 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
No data available Reproductive toxicity - Rat - Intraperitoneal Effects on Newborn: Behavioral. No data available
Specific target organ toxicity -single exposure
No data available
Specific target organ toxicity -repeated exposure
No data available
Aspiration hazard
No data available
Additional Information
RTECS: MV8925000 Liver injury may occur., Kidney injury may occur., Blood disorders Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 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
Toxicity to bacteria	No data available

12.2 Persistence and degradability

Biodegradability	Biotic/Aerobic - Exposure time 28 d Result: 97 % - Readily biodegradable
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12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 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

13.1 Waste treatment methods

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

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:yes

IATA

UN number: 2572 Class: 6.1 Packing group: II

Proper shipping name: Phenylhydrazine

15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

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

Component	CAS-No.	Revision Date
Phenylhydrazine	100-63-0	1993-04-24

Pennsylvania Right To Know Components

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

Component	CAS-No.	Revision Date
Phenylhydrazine	100-63-0	1993-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

Component	CAS-No.	Revision Date
Phenylhydrazine	100-63-0	2002-09-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox. Acute toxicity

Aquatic Acute Acute aquatic toxicity

Carc. Carcinogenicity

Eye Irrit. Eye irritation

Flam. Liq. Flammable liquids

H227 Combustible liquid.

H301 Toxic if swallowed.

H301 + H311 +H331 Toxic if swallowed, in contact with skin or if inhaled

H311 Toxic in contact with skin.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

HMIS Rating

Health hazard: 2

Chronic Health Hazard: *

Flammability: 2

Physical Hazard 0

NFPA Rating

Health hazard: 2

Fire Hazard: 2

Reactivity Hazard: 0
