



From: Avantor Performance Materials, Inc.  
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24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtrec: 703-527-3887

**NOTE:** CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service, 1-855-AVANTOR (855-282-6867) for assistance.

## PHENYLHYDRAZINE HYDROCHLORIDE

### 1. Product Identification

**Synonyms:** Phenylhydrazine Monohydrochloride; Phenylhydrazinium Chloride; Hydrazinobenzene hydrochloride

**CAS No.:** 59-88-1

**Molecular Weight:** 144.61

**Chemical Formula:** C6H5NHNH2.HCl

**Product Codes:** T740

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Phenylhydrazine Monohydrochloride	59-88-1	99 - 100%	Yes

### 3. Hazards Identification

#### Emergency Overview

**DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. DUST AND VAPOR ARE EXTREMELY TOXIC AND CORROSIVE. EXPOSURE MAY AFFECT CNS, BLOOD, LIVER AND KIDNEYS.**

**SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

Health Rating: 4 - Extreme (Poison)

Flammability Rating: 1 - Slight

Reactivity Rating: 1 - Slight

Contact Rating: 3 - Severe (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White (Corrosive)

## Potential Health Effects

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Health effects from exposure to phenylhydrazine hydrochloride are expected to parallel those from exposure to Phenylhydrazine. The health effects from exposure to phenylhydrazine are given below. All routes of exposure can produce hemolytic anemia (breakdown of the red blood cells) with resultant injury to liver and kidneys. May cause methemoglobinemia.

### **Inhalation:**

Poison. Corrosive to the respiratory tract. May produce sore throat, coughing, labored breathing, dizziness, bluish skin, faintness.

### **Ingestion:**

Toxic. May be fatal if swallowed. Corrosive to tissues. May cause vomiting, dizziness, faintness, and jaundice.

### **Skin Contact:**

Corrosive. Contact dermatitis and skin sensitization may occur. Other symptoms include redness, pain, burns; skin absorption can happen readily and produce toxic effects noted for inhalation and ingestion.

### **Eye Contact:**

Corrosive. Any eye contact is destructive to eye tissue.

### **Chronic Exposure:**

Chronic and acute exposures may produce blood effects, liver and kidney damage. Phenylhydrazine is a possible cancer hazard based on animal data.

### **Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

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## 4. First Aid Measures

Upon poisoning by PHENYLHYDRAZINE, specific first aid and treatment are essential. Get Immediate Medical Attention For Any Exposure.

### **Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

### **Ingestion:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

### **Skin Contact:**

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

### **Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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## 5. Fire Fighting Measures

### **Fire:**

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

### **Explosion:**

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

### **Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide.

### **Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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## 7. Handling and Storage

Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

For Phenylhydrazine:

-OSHA Permissible Exposure Limit (PEL):

5 ppm (TWA), 10 ppm (STEL) skin

-ACGIH Threshold Limit Value (TLV):

0.1 ppm (TWA) skin, category A2, suspect human carcinogen.

-NIOSH recommended exposure limit (REL):

0.6 mg/m<sup>3</sup>/2H, ceiling concentration

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

### **Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### **Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

### **Appearance:**

White powder.

### **Odor:**

No information found.

**Solubility:**

Freely soluble.

**Density:**

No information found.

**pH:**

No information found.

**% Volatiles by volume @ 21C (70F):**

0

**Boiling Point:**

Not applicable.

**Melting Point:**

250 - 254C (482 - 489F)

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

May produce carbon monoxide, carbon dioxide, nitrogen oxides and hydrogen chloride when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Strong oxidizers.

**Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

## 11. Toxicological Information

Phenylhydrazine hydrochloride: oral mouse LD50: 2100 mg/kg; investigated as a mutagen, tumorigen, reproductive effector.

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Phenylhydrazine Monohydrochloride (59-88-1)	No	No	None

## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

### Domestic (Land, D.O.T.)

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**Proper Shipping Name:** CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (PHENYLHYDRAZINE HYDROCHLORIDE)

**Hazard Class:** 8

**UN/NA:** UN3261

**Packing Group:** III

**Information reported for product/size:** 100G

### International (Water, I.M.O.)

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**Proper Shipping Name:** CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (PHENYLHYDRAZINE HYDROCHLORIDE)

**Hazard Class:** 8

**UN/NA:** UN3261

**Packing Group:** III

**Information reported for product/size:** 100G

### International (Air, I.C.A.O.)

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**Proper Shipping Name:** CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (PHENYLHYDRAZINE HYDROCHLORIDE)

**Hazard Class:** 8

**UN/NA:** UN3261

**Packing Group:** III

**Information reported for product/size:** 100G

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## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----  
Ingredient TSCA EC Japan Australia  
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Phenylhydrazine Monohydrochloride (59-88-1) Yes Yes Yes Yes

-----\Chemical Inventory Status - Part 2\-----  
Ingredient Korea --Canada-- DSL NDSL Phil.  
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Phenylhydrazine Monohydrochloride (59-88-1) Yes Yes No Yes

-----\Federal, State & International Regulations - Part 1\-----  
Ingredient -SARA 302- -----SARA 313-----  
RQ TPQ List Chemical Catg.  
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Phenylhydrazine Monohydrochloride (59-88-1) 1000 1,000\* No No

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Phenylhydrazine Monohydrochloride (59-88-1)	1	No	No

Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No  
SARA 311/312: Acute: Yes      Chronic: Yes      Fire: No      Pressure: No  
Reactivity: No      (Pure / Solid)

**WARNING:**

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

**Australian Hazchem Code:** None allocated.

**Poison Schedule:** None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: 3 Flammability: 1 Reactivity: 0

**Label Hazard Warning:**

DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. DUST AND VAPOR ARE EXTREMELY TOXIC AND CORROSIVE. EXPOSURE MAY AFFECT CNS, BLOOD, LIVER AND KIDNEYS.

**Label Precautions:**

Do not breathe dust. Do not get in eyes, on skin, or on clothing. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

**Label First Aid:**

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases get medical attention immediately.

**Product Use:** Laboratory Reagent.

**Disclaimer:**

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**Prepared by:** Environmental Health & Safety