Material Safety Data Sheet
Phenylhydrazine hydrochloride, 99+%

ACC# 73123

Section 1 - Chemical Product and Company Identification

MSDS Name: Phenylhydrazine hydrochloride, 99+%
Catalog Numbers: AC151550000, AC151550050, AC151551000, AC151555000
Synonyms: Hydrazine, phenyl-, hydrochloride; Hydrazine, phenyl-, monohydrochloride; Phenylhydrazine monohydrochloride; Phenylhydrazin hydrochlorid; Phenylhydrazinium chloride
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
59-88-1	Phenylhydrazine hydrochloride	99+	200-444-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white to cream powder.
Warning! Harmful if swallowed, inhaled, or absorbed through the skin. Possible risks of irreversible effects. Causes respiratory tract irritation. May cause allergic skin reaction. Causes eye and skin irritation. May cause blood abnormalities. May cause liver and kidney damage. Light sensitive. Air sensitive. Dangerous for the environment.
Target Organs: Blood, kidneys, liver, lungs, skin.

Potential Health Effects

Eye: Causes eye irritation.
Skin: Causes skin irritation. Harmful if absorbed through the skin. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause eczematous dermatitis with swelling and vesiculation.
Ingestion: Harmful if swallowed. May cause liver and kidney damage. Causes gastrointestinal tract irritation. May cause systemic effects by ingestion: blood hemolysis with or without anemia, methemoglobinemia-carboxyhemoglobinemia, and pulmonary changes. May cause central nervous system stimulation.
Inhalation: Harmful if inhaled. Causes respiratory tract irritation. May cause effects similar to those described for ingestion. Acute exposure to low concentrations of hydrazines may cause and produce bronchial mucous destruction, pulmonary edema, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood) and possible death.
Chronic: Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated eye contact may cause conjunctivitis. May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconsciousness and possible death. May cause fetal effects. May cause cancer according to animal studies. Laboratory experiments have resulted in mutagenic effects. Chronic inhalation may cause liver damage.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid imme diately.
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Call a poison control center. 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: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Notes to Physician: For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood. Monitor arterial blood gases, chest x-ray, pulmonary function tests if respiratory tract irritation or respiratory depression is evident. Monitor methemoglobin and blood sugar levels.

Section 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. 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. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.
Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire. Use carbon dioxide, dry chemical, or water fog.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Place under an inert atmosphere.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Store protected from light. Handle under an inert atmosphere. Store protected from air. Use only in a chemical fume hood.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not expose to air. Store protected from light. Store under an inert atmosphere.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Phenylhydrazine hydrochloride	none listed	none listed	none listed

OSHA Vacated PELs: Phenylhydrazine hydrochloride: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Powder
Appearance: white to cream
Odor: weak aromatic odor
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point:250-154 deg C
Decomposition Temperature:> 245 deg C
Solubility: Soluble.
Specific Gravity/Density: Not available.
Molecular Formula:C6H8N2.HCl
Molecular Weight:144.61

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. May violently decompose at temperatures above 190°C.
Conditions to Avoid: Incompatible materials, light, dust generation, exposure to air, temperatures above 90°C.
Incompatibilities with Other Materials: Air, strong oxidizing agents, lead dioxide, common metals (expect aluminum), bases.
Hazardous Decomposition Products: Hydrogen chloride, nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 59-88-1: MV9000000
LD50/LC50:
CAS# 59-88-1:
Oral, mouse: LD50 = 2100 mg/kg;

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CAS# 100-63-0: Oral, rat: LD50 = 188 mg/kg.; Inhalation, rat: LC50 = 2610 mg/m3. (The toxicity of this product is partially based on the hazards associated with Phenylhydrazine (CAS# 100-63-0).
Carcinogenicity:
CAS# 59-88-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: Intraperitoneal, rat: TDLo = 30 mg/kg (female 17-19 day(s) after conception) Effects on Newborn - behavioral.
Reproductive Effects: No information found
Mutagenicity: Oral, mouse: TDLo = 8000 mg/kg/42W-I (Tumorigenic - neoplastic by RTECS criteria--Lungs, Thorax, or Respiration - Tumors); Oral, mouse: TD = 10 gm/kg/58W-C (Tumorigenic - neoplastic by RTECS criteria--Vascular - Tumors and Blood - Lymphoma, including Hodgkin's disease); Mutation in microorganisms: Salmonella typhimurium = 800 ug/plate; DNA repair: Rat, liver = 10 umol/L.
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: The environmental hazards of phenylhydrazine may be seen in this product.
Physical: No information available.
Other: No information available.

Section 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: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	TOXIC SOLIDS, ORGANIC, N.O.S.	TOXIC SOLID ORGANIC NOS (PHENYLHYDRAZINE HYDROCHLORIDE)
Hazard Class:	6.1	6.1
UN Number:	UN2811	UN2811
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 59-88-1 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
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
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
CAS# 59-88-1: 1000 lb TPQ (lower threshold); 10000 lb TPQ (upper thres hold)
SARA Codes
CAS # 59-88-1: immediate, delayed, reactive.
Section 313 No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
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# 59-88-1 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: CAS# 59-88-1: 1.4 æg/day NSRL

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T N

Risk Phrases:

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 36/38 Irritating to eyes and skin.
R 43 May cause sensitization by skin contact.
R 45 May cause cancer.
R 50 Very toxic to aquatic organisms.
R 48/23/24/25 Toxic : danger of serious damage to health by prolonged exposure through inhalation, contact with skin and if swallowed.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 53 Avoid exposure - obtain special instructions before use.
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 59-88-1: 3

Canada - DSL/NDSL

CAS# 59-88-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B, D2A.

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

Section 16 - Additional Information

MSDS Creation Date: 4/26/1999
Revision #4 Date: 10/03/2005