Material Safety Data Sheet
Phenylhydrazine, 95%

ACC# 97394

Section 1 - Chemical Product and Company Identification

MSDS Name: Phenylhydrazine, 95%
Catalog Numbers: AC296680000, AC296680050, AC296680250, AC296685000
Synonyms: Hydrazine, phenyl-; Hydrazine-benzene; Hydrazinobenzene; Phenylhydrazin
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
100-63-0	Phenylhydrazine	95	202-873-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: oily liquid. Flash Point: 88 deg C.
Danger! May be fatal if absorbed through the skin. Causes severe eye and skin irritation with possible burns. Possible risks of irreversible effects. Harmful if inhaled or swallowed. Causes eye and skin irritation. **Combustible liquid and vapor.** Cancer suspect agent. May cause blood abnormalities. May cause liver and kidney damage. Air sensitive. Light sensitive.
Target Organs: Blood, kidneys, liver, spleen, lungs, bone marrow, skin.

Potential Health Effects

Eye: Causes severe eye irritation. May cause retinal damage.
Skin: Causes severe skin irritation. May be fatal 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 kidney, liver and spleen damage. May cause bone marrow damage. May cause systemic effects by ingestion: blood hemolysis with or without anemia, methemoglobinemia-carboxyhemoglobinemia, and pulmonary changes. Causes digestive tract irritation with possible burns.
Inhalation: Harmful if inhaled. May cause effects similar to those described for ingestion. Causes severe respiratory tract irritation. Inhalation may produce weakness, fatigue, dizziness, and vertigo. 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: Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated eye contact may cause conjunctivitis. Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. 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. Laboratory experiments have resulted in mutagenic effects.

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: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
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. Effects may be delayed.

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. Water runoff can cause environmental damage. Dike and collect water used to fight fire. 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. Combustible liquid. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated.
Extinguishing Media: Use water spray to cool fire-exposed containers. Use agent most appropriate to extinguish fire. Do NOT get water inside containers. For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide,

alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.
Flash Point: 88 deg C (190.40 deg F)
Autoignition Temperature: 173 deg C (343.40 deg F)
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Place under an inert atmosphere. Do not get water inside containers.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. 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. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. 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	0.1 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous r oute	15 ppm IDLH	5 ppm TWA; 22 mg/m3 TWA

OSHA Vacated PELs: Phenylhydrazine: 5 ppm TWA; 20 mg/m3 TWA
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: Liquid
Appearance: yellow - oily
Odor: weak aromatic odor
pH: pkb=8.79 @ 15C
Vapor Pressure: 1 mm Hg @ 71.8 C
Vapor Density: 3.7 (Air = 1)
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 243.5 deg C (dec)
Freezing/Melting Point:19.5 deg C
Decomposition Temperature:243.5 deg C
Solubility: Slightly soluble.
Specific Gravity/Density:1.098
Molecular Formula:C6H8N2
Molecular Weight:108.0694

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Turns reddish-brown on exposure to light.
Conditions to Avoid: Incompatible materials, light, ignition sources, exposure to air, excess heat, strong oxidants.
Incompatibilities with Other Materials: Oxidizing agents, lead dioxide, perchloryl fluoride, 2-phenylamino-3-phenyloxazirane, air, isopropylamine, isobutylamine, lead (IV) oxide.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 100-63-0: MV8925000
LD50/LC50:
CAS# 100-63-0:
Inhalation, mouse: LC50 = 2120 mg/m3;
Inhalation, rat: LC50 = 2610 mg/m3;
Oral, mouse: LD50 = 175 mg/kg;
Oral, rabbit: LD50 = 80 mg/kg;
Oral, rat: LD50 = 188 mg/kg;
.
Skin, rabbit: LD50 = 90mg/kg; Inhalation, rat: LC50 = 2610
Carcinogenicity:
CAS# 100-63-0:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 7/1/92
- **NTP:** Not listed.
- **IARC:** Not listed.

Epidemiology: NIOSH has recommended that this compound be regulated as a carcinogen.
Teratogenicity: Intraperitoneal, rat: TDLo = 30 mg/kg (female 17-19 days(s) after conception) Effects on Newborn - behavioral.
Reproductive Effects: No information found
Mutagenicity: Subcutaneous, rat: TDLo = 5200 mg/kg/52W-I (Tumorigenic - Carcinogenic by RTECS criteria) Liver, Skin and Appendage - Tumors.; DNA Repair: Escherichia coli = 39100 ng/plate.; Gene Conversion and Mitotic Recombination: Saccharomyces cerevisiae = 25 mg/L.; DNA Damage: Intraperitoneal, mouse = 350 umol/kg.
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: Phenylhydrazine exists primarily in the vapor phrase in the ambient atmosphere and will degrade by reacting with photochemically produced hydroxyl radicals with a half-life of approximately 3 hours. Volatilization and bioaccumulation of phenylhydrazine are not expected to be important fate processes in aquatic environments. This product is expected to show slight adsorption to suspended solids and sediments in water. Estimated BCF value = 5. This value indicates that bioaccumulation in aquatic organisms is not expected to be significant.
Physical: No information available.
Other: Estimated Koc value = 114. This value suggests that phenylhydrazine will show high soil mobility. It will undergo photolysis on soil surfaces but volatilization is not expected to be significant.

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:	PHENYLHYDRAZINE	PHENYLHYDRAZINE
Hazard Class:	6.1	6.1
UN Number:	UN2572	UN2572
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 100-63-0 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
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 100-63-0: immediate, delayed, fire, 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# 100-63-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65
The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:
WARNING: This product contains Phenylhydrazine, a chemical known to the state of California to cause cancer.
California No Significant Risk Level: CAS# 100-63-0: 1.0 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# 100-63-0: 2
Canada - DSL/NDSL
CAS# 100-63-0 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of B3, D1A, 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
CAS# 100-63-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 4/26/1999
Revision #5 Date: 10/03/2005