

Material Safety Data Sheet

Methylhydrazine, 98%

ACC# 39720

Section 1 - Chemical Product and Company Identification

MSDS Name: Methylhydrazine, 98%

Catalog Numbers: AC126950000, AC126950100, AC126951000

Synonyms: 1-Methylhydrazine; Monomethylhydrazine

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
60-34-4	Methylhydrazine	98%	200-471-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 21 deg C.

Danger! May be fatal if inhaled, absorbed through the skin or swallowed. Causes severe eye and skin irritation with possible burns.

Flammable liquid and vapor. Causes digestive and respiratory tract irritation. Hygroscopic (absorbs moisture from the air).

Target Organs: Blood, kidneys, liver.

Potential Health Effects

Eye: Causes eye irritation and possible burns.

Skin: May be fatal if absorbed through the skin. May cause skin burns.

Ingestion: May be fatal if swallowed. May cause digestive tract disturbances.

Inhalation: May be fatal if inhaled. Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Exposure may cause coughing, breathing difficulty, and possible pulmonary edema.

Chronic: Not available.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: 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. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Effects may be delayed. Treat symptomatically and supportively.

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. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Liquid will float and may reignite on the surface of water. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May be ignited by heat, sparks, and flame. Containers may explode when heated.

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Water may be ineffective. Do NOT use straight streams of water. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: 21 deg C (69.80 deg F)

Autoignition Temperature: 196 deg C (384.80 deg F)

Explosion Limits, Lower: 2.50 vol %

Upper: 97.00 vol %

NFPA Rating: (estimated) Health: 3; Flammability: 4; 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. Scoop up with a nonsparking tool, then place into a suitable container for disposal. Remove

all sources of ignition. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Use water spray to reduce vapors or divert vapor cloud drift.

Section 7 - Handling and Storage

Handling: Use only in a well-ventilated area. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Do not ingest or inhale. 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 cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Keep containers tightly closed.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methylhydrazine	0.01 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route	20 ppm IDLH	0.2 ppm Ceiling; 0.35 mg/m3 Ceiling

OSHA Vacated PELs: Methylhydrazine: 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: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: None reported.

pH: Not available.

Vapor Pressure: 48 mbar @ 20 C

Vapor Density: 1.6

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 87 deg C @ 760.00mm Hg

Freezing/Melting Point: - 21.00 - - 0.00 deg

Decomposition Temperature: Not available.

Solubility: soluble

Specific Gravity/Density: .8660g/cm3

Molecular Formula: CH6N2

Molecular Weight: 46.06

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Exposure to flame, moist air.

Incompatibilities with Other Materials: Oxidizing agents - oxygen - peroxides.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, nitrogen.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 60-34-4: MV5600000

LD50/LC50:

CAS# 60-34-4:

Dermal, guinea pig: LD50 = 48 mg/kg;

Inhalation, mouse: LC50 = 56 ppm/4H;

Inhalation, rat: LC50 = 34 ppm/4H;

Oral, mouse: LD50 = 29 mg/kg;

Oral, rat: LD50 = 32 mg/kg;

Skin, rabbit: LD50 = 95 mg/kg;

Skin, rat: LD50 = 183 mg/kg;

Carcinogenicity:

CAS# 60-34-4:

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

Epidemiology: Animal inhalation studies have reported the development of tumors.

Teratogenicity: No data available.

Reproductive Effects: No data available.

Mutagenicity: No data available.

Neurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

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: CAS# 60-34-4: waste number P068.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	METHYLHYDRAZINE	METHYLHYDRAZINE
Hazard Class:	6.1	6.1(3)(8)
UN Number:	UN1244	UN1244
Packing Group:	I	I

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 60-34-4 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

CAS# 60-34-4: 10 lb final RQ; 4.54 kg final RQ

SARA Section 302 Extremely Hazardous Substances

CAS# 60-34-4: 500 lb TPQ

Section 313

This material contains Methylhydrazine (CAS# 60-34-4, 98%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:

CAS# 60-34-4 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

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:

CAS# 60-34-4 is considered highly hazardous by OSHA.

STATE

CAS# 60-34-4 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 Methylhydrazine, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 60-34-4: 0.058 æg/day NSRL (oral); 0.090 æg/day NSRL (inhalation)

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T F C

Risk Phrases:

R 11 Highly flammable.
R 26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
R 34 Causes burns.
R 45 May cause cancer.
R 46 May cause heritable genetic damage.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
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.

WGK (Water Danger/Protection)

CAS# 60-34-4: No information available.

Canada - DSL/NDSL

CAS# 60-34-4 is listed on Canada's NDSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, 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# 60-34-4 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information
--

MSDS Creation Date: 8/26/1998

Revision #4 Date: 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.