Material Safety Data Sheet

Hydrazine Monohydrate 99%

ACC# 95737

Section 1 - Chemical Product and Company Identification

MSDS Name: Hydrazine Monohydrate 99%
Catalog Numbers: AC196710000, AC196710050, AC196711000, AC196715000
Synonyms: Hydrazine Hydrate, Hydrazine Hydroxide, Hydrazinium Hydroxide.
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
7803-57-8	Hydrazine Monohydrate	99	unlisted

Hazard Symbols: T C
Risk Phrases: 10 23/24/25 34 40 43 45

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: Not available. Flash Point: 75 deg C. Danger! Corrosive. Combustible liquid and vapor. Causes eye and skin burns. Harmful if swallowed. Causes digestive and respiratory tract burns. May cause allergic skin reaction. May cause liver and kidney damage. May cause blood abnormalities. This substance has caused adverse reproductive and fetal effects in animals. May cause cancer based on animal studies. Carcinogen. Air sensitive.
Target Organs: Blood, kidneys, liver, respiratory system.

Potential Health Effects

Eye: Causes severe eye irritation. May cause irreversible eye injury. Contact with liquid or vapor causes severe burns and possible irreversible eye damage.
Skin: Causes severe skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May be absorbed through the skin. Contact with liquid is corrosive and causes severe burns and ulceration.
Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. Causes digestive tract burns with immediate pain, swelling of the throat, convulsions, and possible coma. Exposure may cause anemia and other blood abnormalities.

Inhalation: Effects may be delayed. May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Irritation may lead to chemical pneumonitis and pulmonary edema. May cause liver and kidney damage. May cause severe irritation of the upper respiratory tract with pain, burns, and inflammation. May cause lung damage.
Chronic: Prolonged or repeated exposure may cause adverse reproductive effects. Repeated inhalation may cause chronic bronchitis. May cause fetal effects. May cause cancer according to animal studies. Repeated exposure may cause sensitization dermatitis. Chronic exposure may lead to liver and lung damage.

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Gently lift eyelids and flush continuously with water. Extensive irrigation with water is required (at least 30 minutes).
Skin: Get medical aid immediately. Immediately flush skin with plenty of soap and 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: Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: 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 can travel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.
Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as saw dust.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. 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 sources of ignition. Do not store in direct sunlight. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area.

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
Hydrazine Monohydrate	none listed	none listed	none listed

OSHA Vacated PELs: Hydrazine Monohydrate: 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 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: Not available.
Odor: Strong, ammonia-like.
pH: Not available.
Vapor Pressure: 11.6 mm Hg @ 20 deg C
Vapor Density: 1.73 (air=1)
Evaporation Rate:>1.0
Viscosity: 1.50 mPas 20 deg C
Boiling Point: 120.1 deg C @ 760.00mm Hg
Freezing/Melting Point:-51.5 deg C
Autoignition Temperature: 280 deg C (536.00 deg F)
Flash Point: 75 deg C (167.00 deg F)
Decomposition Temperature:Not available.
NFPA Rating:
Explosion Limits, Lower:4.00 vol %
Upper: 99.99 vol %
Solubility: Miscible.
Specific Gravity/Density:1.0320g/cm3
Molecular Formula:H4N2.H2O
Molecular Weight:50.06

Section 10 - Stability and Reactivity

Chemical Stability: Stable. However becomes unstable if dehydrated.
Conditions to Avoid: Ignition sources, temperatures above 100°C.
Incompatibilities with Other Materials: Substance is incompatible with oxidizers, combustible materials, alkali metals, chloride, fluorine, and ammonia. Hydrazine is highly reactive reducing agent. May ignite spontaneously in contact with oxidizers. Incompatible with oxidizing agents (incl. air), acids, and some metal oxides and metals. Substance may spontaneously ignite in air when in contact with porous materials. Ignites on contact with dinitrogen oxide and tetroxide, hydrogen peroxide, tetryl, and nitric acid. Explodes on contact with dicyanofurazan, n-halomides, potassium, silver compounds, sodium hydroxide, titanium compounds, and trioxygen difluoride. Explosive compounds may result from contact with air, chloromethylnitrobenzene, lithium perchlorate, metal salts, methanol + nitromethane, sodium, and sodium perchlorate.
Hazardous Decomposition Products: Nitrogen oxides, ammonia and/or derivatives.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 7803-57-8: MV8050000
LD50/LC50:
CAS# 7803-57-8:
Oral, mouse: LD50 = 83 mg/kg;
Oral, rabbit: LD50 = 55 mg/kg;
Oral, rat: LD50 = 129 mg/kg;

Carcinogenicity:
CAS# 7803-57-8: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: Hydrazine (anhydrous) has shown a high tumor-generating pote ntial in a variety of studies. Please refer to Patty's Ind ustrial Hygiene and Toxicology for specific information. Hyd razine is listed by CA Proposition 65.
Teratogenicity: Effects on Newborn: Biochemical and Metabolic, intramuscular- hamster TDLo=150mg/kg.
Reproductive Effects: Fertility: Pre and Post-implantation mortality, inhalation-rat TDLo=130ug/m3/5H. Paternal Effects: Spermatogenesis, inhalation-rat TCLo=10ug/m3/5H.
Neurotoxicity: No information available.
Mutagenicity: Please refer to RTECS MV8050000 for specific information.
Other Studies: Skin sensitization, guinea pig: sensitized 4 of 4. Dermal LD 50, rabbit: 91 mg/kg. Inhalation LC50, rat: 570 ppm/4 hours. Inhalation: Chronic exposure to 5 ppm caused death in rats.

Section 12 - Ecological Information

Ecotoxicity: No data available. European carp: LC50 = 1.48mg/L (unknown time) Zebra fish: LC50 = 3.18mg/L (unknown time) Roach: LC50 = 0.85mg/L (unknown time)
Environmental: Substance shows moderate biological oxygen demand and it may cause some oxygen depletion in aquatic systems. It has a high potential to affect aquatic organisms. Substance is biodegradable and is not likely to bioconcentrate.
Physical: No information available.
Other: None.

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	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	RQ, (TOXIC), HYDRAZINE HYDRATE				HYDRAZINE HYDRATE
Hazard Class:	8				8(6.1)
UN Number:	UN2030				UN2030
Packing Group:	II				II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7803-57-8 is not on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements (40CFR720.3(u)(2)).
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.
SARA

Section 302 (RQ)
None of the chemicals in this material have an RQ.
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 7803-57-8: acute, chronic, flammable, 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# 7803-57-8 can be found on the following state right to know lists: New Jersey.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives
Hazard Symbols:
T C
Risk Phrases:
R 10 Flammable.
R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 34 Causes burns.
R 40 Possible risks of irreversible effects.
R 43 May cause sensitization by skin contact.
R 45 May cause cancer.

Safety Phrases:
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
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# 7803-57-8: 3
Canada
Canada

None of the chemicals in this product are listed on the DSL or NDSL list. This product has a WHMIS classification of B3, D1B, D2A, E.
CAS# 7803-57-8 is not listed on Canada's Ingredient Disclosure List.
Exposure Limits

Section 16 - Additional Information

MSDS Creation Date: 11/19/1997
Revision #1 Date: 8/02/2000
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.