Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name Hydrazine Hydrate

Product Code HX0555

Manufacturer EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc.

Effective Date **3/3/2003**

For More Information Call

856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call

800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym HYDRAZINE

Material Uses Analytical reagent.

Chemical Family Hydrazine Derivative

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
HYDRAZINE HYDRATE	7803-57-8	100

Section 3. Hazards Identification

Physical State and Appearance Liquid. (Fuming liquid.)

Emergency Overview DANGER!
POISON!
MAY BE FATAL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.
CAUSES SEVERE EYE AND SKIN BURNS.
CAUSES RESPIRATORY TRACT BURNS.
COMBUSTIBLE LIQUID AND VAPOR.
LABORATORY TESTS INDICATE MATERIAL MAY BE CARCINOGENIC.

Routes of Entry Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects

Eyes Extremely hazardous in case of eye contact (corrosive). Causes severe eye burns.

Skin Extremely hazardous in case of skin contact (permeator, corrosive). May be fatal if absorbed. Skin contact produces severe burns.

Inhalation Extremely hazardous in case of inhalation. May be fatal if inhaled. Hazardous in case of inhalation (lung corrosive).

Ingestion Extremely hazardous in case of ingestion. May be fatal if swallowed.

Potential Chronic Health Effects

Carcinogenic Effects Hydrazine is a proven animal carcinogenic substance.

Additional information See Toxicological Information (section 11)

Medical Conditions Aggravated by Overexposure: Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes

while removing contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Section 5. Fire Fighting Measures

Flammability of the Product Combustible.

Auto-ignition Temperature Not available.

Flash Points Open cup: 71.667°C (161°F).

Flammable Limits LOWER: 4.7%

Products of Combustion Not available.

Fire Hazards in Presence of Various Substances Flammable in presence of open flames, sparks and static discharge, of heat, of oxidizing materials.

Explosion Hazards in Presence of Various Substances **Risks of explosion of the product in presence of static discharge:** Flammable in presence of open flames, sparks and static discharge. Explosive in presence of open flames, sparks and static discharge.

Risks of explosion of the product in presence of mechanical impact: No.

Fire Fighting Media and Instructions SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Protective Clothing (Fire) Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards Vapor can ignite on contact with strong oxidizer.

Special Remarks on Explosion Hazards Not available.

Section 6. Accidental Release Measures

Small Spill and Leak Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill and Leak Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

Spill Kit Information No specific spill kit required for this product.

Section 7. Handling and Storage

Handling Keep away from heat, sparks and flame. Keep container closed. Do not get in eyes, on skin, or on clothing. Do not ingest. Avoid breathing vapors or spray mists.

Storage Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection

Eyes Face shield.

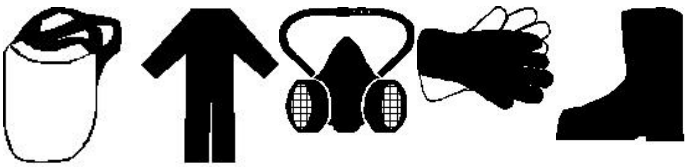
Body Full suit.

Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Feet Boots.

Protective Clothing (Pictograms)



Personal Protection in Case of a Large Spill Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name	Exposure Limits
HYDRAZINE HYDRATE	Not available.

Section 9. Physical and Chemical Properties

Odor Ammoniacal.

Color Colorless.

Physical State and Appearance Liquid. (Fuming liquid.)

Molecular Weight 50.06 g/mole

Molecular Formula H4N2 . H2O

pH Not available.

Boiling/Condensation Point Not available.

Melting/Freezing Point Not available.

Specific Gravity Not available.

Vapor Pressure Not available.

Vapor Density Not available.

Odor Threshold Not available.

Evaporation Rate Not available.

LogKow Not available.

Solubility Soluble in water.

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Conditions of Instability Not available.

Incompatibility with Various Substances Reactive with oxidizing agents, acids.

Rem/Incompatibility Not available.

Hazardous Decomposition Products Not available.

Hazardous Polymerization Will not occur.

Section 11. Toxicological Information

RTECS Number: HydrazineMV8050000 Hydrate, 99% Solution

Toxicity Acute oral toxicity (LD50): 40 mg/kg [Guinea pig].

Chronic Effects on Humans Not available.

Acute Effects on Humans Extremely hazardous in case of eye contact (corrosive). Causes severe eye burns. Extremely hazardous in case of skin contact (permeator, corrosive). May be fatal if absorbed. Skin contact produces severe burns. Extremely hazardous in case of inhalation. May be fatal if inhaled. Hazardous in case of inhalation (lung corrosive). Extremely hazardous in case of ingestion. May be fatal if swallowed.

Synergetic Products (Toxicologically) Not available.

Irritancy Draize Test: Not available.

Sensitization Not available.

Carcinogenic Effects Hydrazine is a proven animal carcinogenic substance.

Toxicity to Reproductive System Tests on laboratory animals for reproductive effects are cited in Registry of Toxic Effects on Chemical Substances (RTECS).

Teratogenic Effects Not available.

Mutagenic Effects Tests on laboratory animals for mutagenic effects are cited in Registry of Toxic Effects of Chemical Substances (RTECS).

Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Toxicity of the Products of Biodegradation The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

EPA Waste Number D002

Treatment Specifed Technology - Contact your local permitted waste disposal site (TSD) for permissible treatment sites. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

Section 14. Transport Information

DOT Classification
Proper Shipping Name: HYDRAZINE AQUEOUS SOLUTION
Hazard Class: 8
UN number: UN2030
Packing Group: II
RQ: 1 lbs. (0.4536 kg)

TDG Classification Not available.

IMO/IMDG Classification Not available.

ICAO/IATA Classification
Proper Shipping Name: HYDRAZINE, AQUEOUS SOLUTION
Hazard Class: 8
UN number: UN2030
Packing Group: II
RQ: 1

Section 15. Regulatory Information

U.S. Federal Regulations TSCA 8(b) inventory: HYDRAZINE HYDRATE

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.
SARA 313 toxic chemical notification and release reporting: No products were found.

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: No products were found.

Clean air act (CAA) 112 regulated flammable substances: No products were found.

Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada)
CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
CLASS E: Corrosive liquid.
No products were found.

This product has been classifed in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

International Regulations

EINECS Not available.

DSCL (EEC) R25- Toxic if swallowed.
R35- Causes severe burns.

International Lists Australia (NICNAS): HYDRAZINE HYDRATE

Japan (MITI): HYDRAZINE HYDRATE

Philippines (RA6969): HYDRAZINE HYDRATE
China: No products were found.

State Regulations New Jersey: HYDRAZINE HYDRATE

California prop. 65: No products were found.

Section 16. Other Information

National Fire Protection Association (U.S.A.)

Health 3

Fire Hazard 2

Reactivity 1

Specific Hazard

Changed Since Last Revision +

Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.