



MATERIAL SAFETY DATA SHEET

Date of Issue: 13 March 2000
Revision: 2
ID: DMHZ

1,1-DIMETHYLHYDRAZINE

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY.

Product Name
1,1-Dimethylhydrazine
Formula
(CH₃)₂NNH₂
Company Identification
See footer.

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation
1,1-Dimethylhydrazine
Components/Impurities
1,1-Dimethylhydrazine
EC No.
200-316-0
CAS No.
57-14-7

3. HAZARDS IDENTIFICATION

Toxic, highly flammable, corrosive liquid. Possible carcinogen. Fumes may cause skin and eye irritation. Avoid inhalation of fumes.

4. FIRST AID MEASURES

Prompt medical attention is required in all cases of exposure to (CH₃)₂NNH₂ and its by-products. Rescue personnel should be equipped with appropriate protective equipment (e.g. Self-contained breathing apparatus) to prevent unnecessary exposure and must be aware of the highly toxic nature of (CH₃)₂NNH₂.

Skin

Immediately remove contaminated clothing if not stuck on skin, and excess material off skin, then wash affected area with copious amounts of water for at least 15 minutes. Obtain medical attention.

Eyes

Immediately flush with running water for at least 15 minutes. Hold eyelids open to ensure complete flushing. Obtain medical attention.

Inhalation

Move exposed personnel to an uncontaminated area wearing breathing apparatus. If breathing is difficult, give oxygen. If breathing has stopped, apply artificial respiration. Obtain medical attention. Keep victim warm and quiet.

Ingestion

Wash out mouth with copious amounts of water for at least 15 minutes. DO NOT induce vomiting. Obtain medical attention.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Always use dry powder or lime. Never use water, foam or halogenated compounds. Without risk, stop flow of material to the fire. Without risk, and if safe to do so, move container(s) away from the fire area.

Exposure Hazards

Toxic liquid / vapors emitted. Highly flammable.

Special Protective Equipment for Fire-Fighters

Self-contained breathing apparatus and protective clothing to prevent liquid / fumes contacting with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Evacuate area. Use appropriate protective equipment. Purge equipment with inert gas before attempting repairs. Ensure adequate ventilation. If leak is in container call one of the emergency numbers as appropriate (See footer).

Environmental Precautions

Try to stop release, if safe to do so. Prevent from entering sewers or waterways.

Clean up methods

Contact Epichem for specific advice.

7. HANDLING AND STORAGE

Handling

Valve outlet seals must remain in place unless container is secured and valve outlet piped to use point. Use a check valve or trap to prevent hazardous back flow into the container. Any equipment used for dimethylhydrazine service must be thoroughly cleaned and prepared to eliminate contamination and maintained in a leak free state. All air and moisture in the system must be eliminated before use.

Storage

Protect containers from physical damage. Store in a cool dry place away from flammable material. Do not allow temperatures to exceed (125F) 51C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Controls

OSHA and ACGIH:

TLV(TWA)= 0.01 ppm (0.025 mg/m³) (skin)

PEL(TWA)= 0.5 ppm (1.0 mg/m³) (skin)

OES and MEL:

(CH₃)₂NNH₂ exposure limit is (8-hour TWA reference period)

0.01ppm (skin). 0.5ppm (air)

Ensure adequate ventilation.

Personal Protection

Self-contained breathing apparatus, rubber gloves, face shield and safety goggles, safety shoes and fire-resistant garments. Safety shower and eyewash.



9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: (143-147F) 62-64°C
Flash point: (34F) 1°C
Autoignition temperature: (478F) 247C
Liquid Density: 0.791 g/ml
Melting Point: (-72.4F) -58C
Molecular Weight: 60.10 grams
Vapor Density: 1.94
Vapor Pressure: $\text{Log}_{10}P(\text{mmHg})=8.19-1780/T(\text{K})$
Explosion limits: Upper 95 vol%, Lower 2 vol%.
Appearance: Clear colorless liquid.

10. STABILITY AND REACTIVITY

Conditions to avoid

Do not overheat.

Note; Dimethylhydrazine is stable indefinitely in an inert atmosphere at room temperature.

Materials to avoid

Avoid oxidizers, copper/copper alloys, iron and iron salts.

Hazardous Decomposition Products

CO, CO₂, Nitrogen Oxides

11. TOXICOLOGICAL INFORMATION

(CH₃)₂NNH₂ is toxic. It may be fatal if inhaled, swallowed or absorbed through skin due to spasm, inflammation and edema of the larynx and bronchi. Symptoms may include coughing, wheezing, laryngitis, headache, nausea and vomiting. Can cause damage to liver, kidneys and blood effects. Carcinogen.

1,1- Dimethylhydrazine is listed on the TSCA inventory.

12. ECOLOGICAL INFORMATION

This product does not contain a Class I or Class II ozone depleting agent.

13. DISPOSAL CONSIDERATIONS

Regional and National regulations should be followed during waste disposal. Contact an Epichem representative for disposal of container and any unused quantities.

14. TRANSPORT INFORMATION

UN No: 1163
CLASS: 6.1, 3, 8
PG I, Poison Inhalation Hazard-Zone B
ECCN#: EAR99
IMDG Code: 6132
Shipping Name: 1,1-DIMETHYLHYDRAZINE

15. REGULATORY INFORMATION

Classification

Toxic, Highly Flammable, Corrosive.

Risk and Safety Phrases

R11: Highly Flammable

R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.

R34: Causes burns.

R45: May cause cancer.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53: Avoid exposure – obtain special instruction before use.

16. OTHER INFORMATION

Ensure operators understand the toxic, highly flammable and corrosive nature of the product. Before using this product it is recommended that a risk assessment and safety study is carried out. Further information on the use of this product can be obtained from the Technical Product Manager at the nearest Epichem facility.

SAFETY NOTICE: In Order to provide our customers with the highest quality material and maintain our high standards of safety, the surface temperature of the bubbler will be monitored during the transportation of our products. We would like to monitor the surface temperature of the bubbler using a tempilabel. Tempilabel is a temperature-monitoring strip ranging from 120F to 150F (49C to 66C) which will indicate the temperature during shipment. The strip will turn black at one of the four ratings shown if the temperature is reached (normally a silver centre). If the temperature monitor is changed, please notify an Epichem representative immediately and we will assist you in the proper measures to be taken. We ask for your co-operation in our efforts of quality assurance and safety. If you have any questions or comments, please contact an Epichem representative. We thank you for your co-operation. Your assistance is greatly appreciated.

Information contained in this material safety data sheet is offered without charge for use by technically qualified personnel at their discretion and risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed no warranty of any kind is made with respect thereto. This information is not intended as a license to operate under or a recommendation to practice or infringe any patent of this Company or others covering any process, composition of matter or use.

Since the Company shall have no control of the use of the product described herein, the company assumes no liability for loss or damage incurred from the proper or improper use of such product.

EPICHEM LIMITED
POWER ROAD, BROMBOROUGH
WIRRAL, MERSEYSIDE, CH62 3QF, U.K.
Tel: 44 (0) 151 334 2774
Fax: 44 (0) 151 334 6422

EPICHEM INCORPORATED
26 WARD HILL AVE, PO BOX 8230
HAVERHILL, MA, 01835, USA
Tel: 1 508 374 5200
Fax: 1 508 374 6474

24 Hour Emergency Contact Numbers:

Europe: 44 151 334 2774 United States: Chemtrec: (800) 424 9300
Other International Countries: Chemtrec (703) 527 3887