



# DIMETHYLAMINE (25-40% AQUEOUS SOLUTIONS)

## MATERIAL SAFETY DATA SHEET

### 1. Product Identification

**Synonyms:** methanamine,N-methyl

**CAS No.:** 124-40-3

**Molecular Weight:** 45.09

**Chemical Formula:** (CH<sub>3</sub>)<sub>2</sub>NH

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### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
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Dimethylamine	124-40-3	25 - 40%
No		
Water	7732-18-5	60 - 75%
No		

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### 3. Hazards Identification

**Emergency Overview**

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**DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES BURNS TO ANY AREA OF CONTACT.**

**SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

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Health Rating: 3 - Severe (Life)

Flammability Rating: 4 - Extreme (Flammable)

Reactivity Rating: 1 - Slight

Contact Rating: 4 - Extreme (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD;  
PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Red (Flammable)

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### **Potential Health Effects**

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#### **Inhalation:**

Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, and labored breathing. May cause lung edema, a medical emergency.

#### **Ingestion:**

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach. Can cause sore throat, vomiting, diarrhea.

#### **Skin Contact:**

Corrosive. Symptoms of redness, pain, and severe burn can occur. May be absorbed through the skin causing nausea, headache and general discomfort.

#### **Eye Contact:**

Vapors are highly irritating and can cause corneal damage. Contact with liquid can cause severe burns and blindness.

#### **Chronic Exposure:**

Chronic exposure may cause dermatitis, conjunctivitis, and lung problems.

#### **Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

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## **4. First Aid Measures**

#### **Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

#### **Ingestion:**

DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

#### **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.

**Eye Contact:**

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

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## 5. Fire Fighting Measures

**Fire:**

Flash point: -18C (0F)

Autoignition temperature: 430C (806F)

Flammable limits in air % by volume:

lel: 2.8; uel: 14.4

Extremely Flammable Liquid.

**Explosion:**

Above flash point, vapor-air mixtures are explosive within flammable limits noted above.

Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.

**Fire Extinguishing Media:**

Stop flow before extinguishing fire. Dry chemical, alcohol foam or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! Use water spray to reduce vapors and dilute spills to nonflammable mixtures.

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## 7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

-OSHA Permissible Exposure Limit (PEL): 10 ppm (TWA)

-ACGIH Threshold Limit Value (TLV):

5 ppm (TWA), 15 ppm (STEL)

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded and engineering controls are not feasible, a half-face respirator with an ammonia/methylamine cartridge may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an ammonia/methylamine cartridge may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. The recommended cartridge is not specifically approved for this substance. Organic vapor cartridges have a service life of less than 30 minutes with this material.

### **Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### **Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

### **Other Control Measures:**

There is insufficient data in the published literature to assign complete numerical SAF-T-DATA\* ratings and laboratory protective equipment for this product. Special precautions must be used in storage, use and handling. Protective equipment for laboratory bench use should be chosen using professional judgment based on the size and type of reaction or test to be conducted and the available ventilation, with overriding consideration to minimize contact with the chemical.

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## 9. Physical and Chemical Properties

### **Appearance:**

Clear, colorless liquid.

### **Odor:**

Ammonia odor.

### **Solubility:**

Very soluble in water.

**Specific Gravity:**

0.83 - 0.93

**pH:**

Highly alkaline; (MASC.)

**% Volatiles by volume @ 21C (70F):**

100

**Boiling Point:**

No information found.

**Melting Point:**

No information found.

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Oxidizing agents, acids, acrylaldehyde, fluorine, chlorine, mercury, and maleic anhydride. It will attack some forms of plastics, rubber, and coating.

**Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

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## 11. Toxicological Information

Oral rat LD50: 698 mg/kg; inhalation rat LC50: 4540 ppm/6H; investigated as a mutagen.

-----\Cancer Lists\-----

Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
Dimethylamine (124-40-3)	No	No	None
Water (7732-18-5)	No	No	None

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## 12. Ecological Information

### Environmental Fate:

When released into the soil, this material is expected to quickly evaporate. When released into the soil, this material may leach into groundwater. When released into the soil, this material may biodegrade to a moderate extent. When released into water, this material is expected to readily biodegrade. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

### Environmental Toxicity:

No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

### Domestic (Land, D.O.T.)

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**Proper Shipping Name:** DIMETHYLAMINE SOLUTION

**Hazard Class:** 3, 8

**UN/NA:** UN1160

**Packing Group:** II

**Information reported for product/size:** 1KG

### International (Water, I.M.O.)

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**Proper Shipping Name:** DIMETHYLAMINE, AQUEOUS SOLUTION

**Hazard Class:** 3, 8

**UN/NA:** UN1160

**Packing Group:** II

**Information reported for product/size:** 1KG

### International (Air, I.C.A.O.)

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**Proper Shipping Name:** DIMETHYLAMINE, AQUEOUS SOLUTION

**Hazard Class:** 3

UN/NA: UN1160  
 Packing Group: II  
 Information reported for product/size: 1KG

## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	
Australia				
Dimethylamine (124-40-3)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	Korea	DSL	NDSL	Phil.
Dimethylamine (124-40-3)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	RQ	TPQ	List	Chemical
Dimethylamine (124-40-3)	No	No	Yes	No
Water (7732-18-5)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Dimethylamine (124-40-3)	1000	U092	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: Yes    TSCA 12(b): No    CDTA: No  
 SARA 311/312: Acute: Yes    Chronic: Yes    Fire: Yes    Pressure: No  
 Reactivity: No    (Mixture / Liquid)

**Australian Hazchem Code:** 2PE  
**Poison Schedule:** None allocated.  
**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: **3** Flammability: **3** Reactivity: **0**

**Label Hazard Warning:**

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES BURNS TO ANY AREA OF CONTACT.

**Label Precautions:**

No SAF-T-DATA Ratings have been developed for this product. Read and follow all warnings, precautions, instructions and other safety and handling information on the label and MSDS.

Do not breathe vapor.

Do not get in eyes, on skin, or on clothing.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Keep away from heat, sparks and flame.

**Label First Aid:**

In all cases call a physician immediately. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 3.

**Disclaimer:**

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