

# **MSDS – MATERIAL SAFETY DATA SHEET**

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## **N, N-DIMETHYLANILINE**

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### **1. Product Identification**

**Synonyms:** Xylidine; N,N-dimethylbenzenamine; benzenamine,N,N-dimethyl-;dimethylphenylamine

**CAS No.:** 121-69-7

**Molecular Weight:** 122

**Chemical Formula:** C<sub>6</sub>H<sub>5</sub>N(CH<sub>3</sub>)<sub>2</sub>

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### **2. Composition/Information on Ingredients**

Ingredient	CAS No	Percent	Hazardous
Dimethylaniline	121-69-7	90 - 100%	Yes

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### **3. Hazards Identification**

#### **Emergency Overview**

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**DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR. AFFECTS BLOOD, KIDNEYS, LIVER, CARDIOVASCULAR SYSTEM.**

**SAFETY DATA** Ratings (Provided here for your convenience)

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Health Rating: 2 - Moderate

Flammability Rating: 2 - Moderate

Reactivity Rating: 1 - Slight

Contact Rating: 3 - Severe (Life)

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:**

May be fatal if excessively inhaled. Inhalation of vapors may cause systemic poisoning, symptom may parallel those from ingestion exposure.

#### **Ingestion:**

May be fatal if excessively ingested. Can cause methemoglobinemia. May cause bluish skin, headache, nausea, vomiting, and dry throat. Prominent central nervous system depression can occur, with confusion, ataxia, vertigo, tinnitus, weakness, disorientation, lethargy, drowsiness, convulsions, and coma. Death may occur from cardiovascular collapse. May cause kidney and liver damage and blood disorders.

#### **Skin Contact:**

May cause irritation, redness, and pain. Readily absorbed through the skin. Symptoms may parallel those from ingestion exposure.

#### **Eye Contact:**

May cause irritation, redness, pain, and corneal damage.

#### **Chronic Exposure:**

Repeated or prolonged exposure through any route of exposure may cause decreased appetite, with anemia, weight loss, nervous system effects, and kidney, liver, and bone marrow damage.

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

Persons with impaired kidney, liver, or cardiovascular function or pre-existing blood disorders may be more susceptible to the effects of this material.

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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. Get medical attention immediately.

#### **Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

#### **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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## 5. Fire Fighting Measures

**Fire:**

Flash point: 63C (145F) CC

Autoignition temperature: 371C (700F)

Flammable limits in air % by volume:

lel: 1.0; uel: 7.0

Combustible Liquid and Vapor! Contact with strong oxidizers may cause fire.

**Explosion:**

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

**Fire Extinguishing Media:**

Water spray, 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. Fight fire from maximum distance.

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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! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802. If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

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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. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

-OSHA Permissible Exposure Limit (PEL):

5 ppm (TWA)

-ACGIH Threshold Limit Value (TLV):

5 ppm (TWA), 10 ppm (STEL) skin

### **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 organic vapor respirator 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 organic vapor respirator 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-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

### **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.

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## 9. Physical and Chemical Properties

### **Appearance:**

Pale yellow to brown, oily liquid.

### **Odor:**

Amine-like odor.

**Solubility:**

Negligible.

**Density:**

0.956 @ 20C/4C

**pH:**

No information found.

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

No information found.

**Boiling Point:**

193C (379F)

**Melting Point:**

2.5C (36F)

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

4.2

**Vapor Pressure (mm Hg):**

0.52 @ 25C (77F)

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

< 1

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Emits toxic fumes of nitric oxides, carbon oxides, and aniline when heated to decomposition.

**Hazardous Polymerization:**

This substance does not polymerize.

**Incompatibilities:**

Dibenzoyl peroxide, diisopropyl peroxydicarbonate. Contact with oxidizing agents may cause fire. Contact with acids may cause splattering. May attack plastics and rubber.

**Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

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## 11. Toxicological Information

Oral rat LD50: 1410 mg/kg; skin rabbit LD50: 1770 mg/kg; Skin rabbit standard Draize: 500 mg/24H, mild. Skin rabbit open Draize: 10 mg/24H open, mild. Investigated as a tumorigen and mutagen.

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Dimethylaniline (121-69-7)	No	No	3

## 12. Ecological Information

### Environmental Fate:

When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater. 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.

**Environmental Toxicity:** No information found.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. 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.

## 14. Transport Information

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

**Proper Shipping Name:** N,N-DIMETHYLANILINE

**Hazard Class:** 6.1

**UN/NA:** UN2253

**Packing Group:** II

**Information reported for product/size:** 2.5L

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

**Proper Shipping Name:** N,N-DIMETHYLANILINE

**Hazard Class:** 6.1

**UN/NA:** UN2253

**Packing Group:** II

**Information reported for product/size:** 2.5L

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

**Proper Shipping Name:** N,N-DIMETHYLANILINE

**Hazard Class:** 6.1

**UN/NA:** UN2253

**Packing Group:** II

**Information reported for product/size:** 2.5L

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## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----  
Ingredient TSCA EC Japan Australia  
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Dimethylaniline (121-69-7) Yes Yes Yes Yes

-----\Chemical Inventory Status - Part 2\-----  
Ingredient Korea DSL NDSL Phil.  
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Dimethylaniline (121-69-7) Yes Yes No Yes

-----\Federal, State & International Regulations - Part 1\-----  
-SARA 302- -SARA 313-----  
Ingredient RQ TPQ List Chemical Catg.  
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Dimethylaniline (121-69-7) No No Yes No

-----\Federal, State & International Regulations - Part 2\-----  
-RCRA- -TSCA-  
Ingredient CERCLA 261.33 8(d)  
-----  
Dimethylaniline (121-69-7) 100 No Yes

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

**Australian Hazchem Code:** 3X

**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.

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## 16. Other Information

**NFPA Ratings:** Health: 3 Flammability: 2 Reactivity: 0

**Label Hazard Warning:**

DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR. AFFECTS BLOOD, KIDNEYS, LIVER, CARDIOVASCULAR SYSTEM.

**Label Precautions:**

Do not get in eyes, on skin, or on clothing.  
Do not breathe vapor.  
Keep container closed.  
Use only with adequate ventilation.  
Wash thoroughly after handling.  
Keep away from heat and flame.

**Label First Aid:**

If swallowed, induce vomiting immediately as directed by medical personnel. 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. In all cases get medical attention immediately.

**Product Use:**

Laboratory Reagent.

**Revision Information:** No Changes.

**Disclaimer:**

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