N,N-Dimethyl Aminoethyl Methacrylate (DMAEMA) MSDS

1. Product Name and Identification

Product Name: N,N-Dimethyl Aminoethyl Methacrylate (DMAEMA)
Synonyms: 2-(Dimethylamino)ethyl Methacrylate
Product CAS Number: 2867-47-2
Recommended Use: Used as a monomer for polymerization in coatings, adhesives, and other industrial applications.
Manufacturer/Distributor: [Insert Manufacturer Details Here]
Emergency Contact: [Insert Emergency Contact Information Here]

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2. Composition/Ingredients

Chemical Name: N,N-Dimethyl Aminoethyl Methacrylate
CAS Number: 2867-47-2
Chemical Formula: C8H15NO2
Molecular Weight: 157.21 g/mol
Concentration: 100% DMAEMA (in pure form)
Impurities/Additives: None reported.

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3. Hazards Identification

Classification of the Substance:

- Flammable Liquid (Category 3)
- Skin Corrosion/Irritation (Category 2)
- Serious Eye Damage/Irritation (Category 2A)
- Specific Target Organ Toxicity - Single Exposure (Respiratory, Category 3)

Label Elements:

- **Signal Word:** Warning
- **Hazard Statements:**
  - H226: Flammable liquid and vapor.
  - H315: Causes skin irritation.
  - H319: Causes serious eye irritation.
  - H335: May cause respiratory irritation.

Precautionary Statements:

- **Prevention:**
  - Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
  - Avoid inhaling vapor. Use in a well-ventilated area.
  - Wear protective gloves, clothing, and eye/face protection.
- **Response:**
  - IF ON SKIN (or hair): Remove immediately contaminated clothing and rinse skin with water. Seek medical attention if irritation develops.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present, and continue rinsing. Seek medical help.
  - IF INHALED: Move the victim to fresh air. Seek immediate medical assistance if symptoms like coughing or irritation persist.
- **Storage and Disposal:**
  - Store in a cool, well-ventilated area.
  - Dispose of all waste in accordance with local regulations.

Other Hazards:

High vapor concentrations may lead to dizziness or respiratory irritation. Prolonged exposure can contribute to skin dryness or eye discomfort.

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4. First Aid Measures

General Advice:

Seek professional medical assistance immediately for major symptoms. Show this MSDS to rescue teams or attending physicians.

- **Eye Contact:** Rinse the eyes immediately with clear water for at least 15 minutes. If irritation does not disappear quickly, consult an eye specialist.
- **Skin Contact:** Flush affected skin with soap and warm water. Remove any contaminated clothing and launder before reuse. Seek medical advice for worsening symptoms.
- **Inhalation:** Remove the individual from the exposure area to a well-ventilated location. If breathing difficulties or irritation occur, seek immediate medical care.
- **Ingestion:** Rinse mouth thoroughly and give small amounts of water to drink if conscious. Do not induce vomiting unless directed by medical personnel. Contact poison control or a medical professional promptly.

Symptoms of Overexposure:

Redness, burning sensation on skin or eyes, coughing, nasal irritation, shortness of breath, or dizziness due to inhalation.

5. Handling and Storage

Handling:

- Use only in well-ventilated areas or employ local exhaust systems to prevent inhalation exposure.
- Avoid direct physical contact, including with eyes, skin, and clothing.
- Do not handle near ignition sources. Ensure that all equipment is grounded properly.

Storage:

- Store in tightly closed and labeled containers. Keep in a cool, dry, and well-ventilated area.
- Keep away from heat, sparks, flames, direct sunlight, and incompatible materials such as strong oxidizers.
- Avoid prolonged storage conditions above 25°C.

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6. Exposure Controls/Personal Protection

Control Parameters:

- **Exposure Limits:** No specific established occupational exposure limits; recommended to minimize levels in the air using general safety practices.

Engineering Controls:

- Install appropriate ventilation measures, including chemical hoods or filtration systems, to mitigate accumulated vapors.
- Emergency stations for eye rinsing and safety showers must be positioned near the work area.

Personal Protective Equipment (PPE):

- **Eye/Face Protection:** Safety goggles or face shields rated for chemical splash protection.
- **Gloves/Skin Protection:** Nitrile gloves, chemical-resistant aprons, or other garments to reduce skin absorption risks.
- **Respiratory Protection:** Use organic vapor respirators, or equivalent protection in poorly ventilated handling areas.

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7. Physical and Chemical Properties

- **Appearance:** Clear to slightly yellow liquid
- **Odor:** Strong amine-like odor
- **Odor Threshold:** Not determined
- **pH (aqueous solution):** Basic, not applicable to pure compound
- **Melting Point:** ~-65°C
- **Boiling Point:** ~195°C (760 mmHg)
- **Flash Point:** ~75°C (closed cup)
- **Auto-ignition Temperature:** ~275°C
- **Flammability:** Flammable under ignition sources
- **Vapor Pressure:** ~0.3 mmHg at 20°C
- **Density:** ~0.91 g/cm³
- **Water Solubility:** Miscible
- **Viscosity:** Low viscosity

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8. Stability and Reactivity

Stability:

The material is relatively stable under controlled refrigeration and lacks evident decomposition pathways without excessive heat or oxygen.

Reactivity:

Displays possible flammability and may slowly self-polymerize under prolonged conditions without stabilizers.

Hazardous Reactions:

- Strong reductions in UV rays lead sometimes to increased emissions, polymer-based fire residues, and nonstandard behaviors triggered entirely if monomers polymerize violently early onset.

Decomposition Products:

When burned, creates acrid ammonia carbon monoxide combustion carbon dioxide nitrogen byproducts

Compositional Thermochemistry: Outputs heated brands backup experimental nitrogen trial basis.