Benzyl Methacrylate (BZMA) MSDS

1. Product Name and Identification

Product Name: Benzyl Methacrylate (BZMA)
Synonyms: Methylacrylic Acid Benzyl Ester, Methacrylic Acid Phenylmethyl Ester
CAS Number: 2495-37-6
Molecular Formula: C11H12O2
Manufacturer's Name: [Fill in as Applicable]
Emergency Contact: [Fill in Emergency Number]

2. Composition/Ingredients

- **Chemical Name:** Benzyl Methacrylate
- **CAS Number:** 2495-37-6
- **Purity:** ≥ 98%
- **EC Number:** 219-670-8
- **Hazardous Components:** May contain stabilizers like hydroquinone methyl ether (< 0.1%) to prevent polymerization.

3. Hazards Identification

Classification:

- Flammable liquid (Category 3)
- Skin corrosion/irritation (Category 2)
- Eye irritation (Category 2A)
- Specific target organ toxicity - single exposure (Category 3, respiratory tract irritation)
- Acute aquatic toxicity (Category 2)

Label Elements:

- **Signal Word:** Warning
- **Hazard Statements:**
  - Flammable liquid and vapor.
  - Causes skin and eye irritation.
  - May cause respiratory irritation.
  - Toxic to aquatic life.
- **Precautionary Statements:**
  - Keep away from heat, open flames, and hot surfaces.
  - Avoid breathing vapors or mist.
  - Wear protective gloves, clothing, and eye protection.
  - Avoid release to the environment.

Potential Health Effects:

- **Eye Contact:** Causes irritation, redness, and a burning sensation.
- **Skin Contact:** May cause redness, irritation, or itching.
- **Inhalation:** Vapors may cause respiratory tract irritation, headache, or dizziness.
- **Ingestion:** May cause gastrointestinal discomfort.

4. First Aid Measures

Eyes: Rinse immediately with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.
Skin: Wash thoroughly with soap and water. Remove contaminated clothing. If irritation or discomfort persists, consult a physician.
Inhalation: Move the person to fresh air. If breathing difficulty occurs, seek immediate medical attention.
Ingestion: Do not induce vomiting. Rinse mouth thoroughly with water and contact a doctor if adverse symptoms occur.

5. Handling and Storage

Handling:

- Avoid inhalation of vapors and direct contact with skin and eyes.
- Use in a well-ventilated area or under fume extraction systems.
- Keep away from ignition sources such as heat, sparks, and flames.

Storage:

- Store in a cool, dry, and well-ventilated area.
- Keep away from direct sunlight and incompatible materials such as oxidizing agents or acids.
- Ensure containers are tightly closed and appropriately labeled.

6. Exposure Controls/Personal Protection

Exposure Limits: No established occupational exposure limits; minimize exposure through good industrial practices.

Engineering Controls:

- Use local exhaust ventilation or explosion-proof ventilation systems to control vapor concentration in the workspace.

Personal Protective Equipment (PPE):

- **Eye Protection:** Chemical safety goggles or face shield.
- **Skin Protection:** Chemical-resistant gloves and protective clothing.
- **Respiratory Protection:** Use a respirator approved for organic vapors in poorly ventilated areas.
- **Hygiene Measures:** Wash thoroughly with water after handling. Avoid eating, drinking, or smoking while working with the product.

7. Physical and Chemical Properties

- **Appearance:** Clear, colorless liquid
- **Odor:** Characteristic aromatic odor
- **Melting Point:** -3°C
- **Boiling Point:** 238°C
- **Flash Point:** Approximately 94°C (closed cup)
- **Solubility in Water:** Insoluble
- **Density:** ~1.05 g/cm³ at 20°C
- **Vapor Pressure:** ~0.02 mmHg at 20°C
- **Viscosity:** Low to moderate viscosity
- **pH:** Not applicable

8. Stability and Reactivity

Stability: Stable under normal conditions of use and storage when stored with stabilizers.
Hazardous Reactions: Possible exothermic polymerization if exposed to heat, UV radiation, or without stabilizer additives.
Conditions to Avoid: Avoid heat, open flames, and prolonged exposure to sunlight. Prevent accidental release of vapors.
Incompatible Materials: Strong acids, bases, oxidizing agents, and free radical initiators.
Hazardous Decomposition Products: Combustion may produce carbon monoxide, carbon dioxide, and acrid fumes.

9. Toxicological Information

Acute Toxicity:

- **Oral (LD50):** ~5300 mg/kg (rat)
- **Dermal (LD50):** > 2000 mg/kg (rabbit)

Chronic Toxicity: Repeated or prolonged exposure may cause dermatitis or respiratory irritation in some individuals.

Routes of Exposure: Skin or eye contact, inhalation of vapors, or accidental ingestion.

Sensitization: May cause sensitization on prolonged or repeated exposure.

Symptoms of Overexposure: Skin redness, eye discomfort, dizziness, headache, and respiratory irritation.

10. Disposal Considerations

Waste Disposal:

- Dispose of material and contaminated containers in accordance with local, regional, and national regulations.
- Do not discharge into sewers or waterways.

Empty Containers: Ensure they are completely clean before recycling or disposal. Follow specific regulations for handling hazardous waste.
