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## Material Safety Data Sheet

### N-Butyl Methacrylate

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#### Section 2 Component Information

Component	CAS Number	Amt. (%)
Butyl methacrylate	97-88-1	99 min
Isobutyl Methacrylate	97-86-9	1.0 max
Other ester adducts	not required	0.70 max
MEHQ	150-76-5	15 ppm max

#### Section 3 Physical Data

Boiling Point: 163°C/325°F

Melting Point: -50°C/-58°F

Viscosity: 0.92 cps at 25°C/77°F

Specific Gravity (water=1): 0.889 g/cc at 25°C/77°F

Vapor Pressure: 4.9 mm Hg at 20°C/68°F

Vapor Density (air-1): >1

Solubility in Water: Not applicable

Percent Volatility: 100%

Evaporation Rate (BAc=1): <1

Appearance: Clear

Color: Colorless

State: Liquid

Odor: Sweet odor

Molecular Formula:  $\text{CH}_2\text{C}(\text{CH}_3)\text{CO}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$

Formula Weight: 142.20

## **Section 4 Fire Fighting Information**

Unusual Hazards:

Vapors can travel to a source of ignition and flash back. Heat can cause polymerization. Heated containers can explode.

Extinguishing Agents:

Use the following extinguishing media when fighting fires involving this material: polar solvent (alcohol) foam, carbon dioxide, dry chemical, water spray.

Personal Protective equipment:

Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear. |

Special procedures:

EXPLOSION HAZARD. Fight advanced fires from a protected location. Use water spray to cool containers exposed to fire.

## **Section 5 Toxicity**

Acute Data:

Dermal LD50: Rabbit > 5000 mg/kg

Oral LD50 Rat > 5000 mg/kg

Inhalation LC50: Rat - 28,000 mg/m<sup>3</sup> for 4 hr

Skin Irritation: Rabbit - practically non-irritating

Eye Irritation: Rabbit - slight irritation

Sensitization Data: Adverse effects observed.

Hazard Rating (scale 0-4): Toxicity=1, Fire=2, Reactivity=2, Special= -  
1= slight, 2= moderate

## **Section 6 First Aid Procedures**

Inhalation:

Move subject to fresh air. Give artificial respiration if breathing has stopped. Call a physician

Eye Contact:

Flush eyes with a large amount of water for at least 15 minutes. Consult a physician if irritation persists.

Skin contact:

Remove and wash contaminated clothing thoroughly. Wash skin thoroughly with soap and water. Consult a physician if irritation persists.

Ingestion:

If swallowed, give 2 glasses of water to drink. Never give anything by mouth to an unconscious person. See a physician.

## **Section 7. Spill or Leak Handling Information**

Personal Protection:

Appropriate protective equipment must be worn when handling a spill of this material. See the Personal Protection Measures Section for recommendations. If exposed to material during clean-up operations, see the First Aid Procedures Section for actions to follow.

Procedures:

Keep spectators away. Eliminate all ignitions sources. Contain spills immediately with inert materials (e.g. sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal. Contaminated monomer may be unstable. Add inhibitor to prevent polymerization. See Waste Disposal Section for information

regarding the disposal of contained spills.

NOTE: Spills on porous surfaces can contaminate groundwater.

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

### **Section 8. Health Effects From Overexposure**

Primary Routes of Exposure:

Inhalation, skin contact, eye contact.

Inhalation:

Inhalation of vapor or mist can cause irritation of nose and throat.

Repeated or prolonged exposure can cause headache, nausea, drowsiness, unconsciousness.

Eye Contact:

Material, as supplied, can cause slight irritation.

Skin Contact:

Material can cause slight irritation and skin sensitization.

Delayed Effects:

Prolonged or repeated exposure can cause allergic skin reaction.

Prolonged or repeated overexposure at near lethal concentrations can cause kidney and liver damage.

### **Section 9. Fire and Explosive Properties**

Flash Point 49°C/120°F

Method: Pensky Martens Closed Cup

Auto-Ignition Temperature: 294°C/561°F

Lower Explosive Limit: 2.0%

Upper Explosive Limit: 8.0%

### **Section 10. Reactivity Information**

Instability:

This material is considered stable under specified conditions of storage, shipment and/or use. See Storage and Handling Information Section for specified conditions.

MEHQ is added as a polymerization inhibitor. However, this material can undergo hazardous polymerization. See Hazardous Polymerization for conditions to avoid.

Hazardous Decomposition Products:

There are no known hazardous decomposition products for this material.

Hazardous Polymerization:

Excessive aging, heat, contamination with polymerization catalysts, oxygen-free atmosphere, inhibitor depletion or ultraviolet light (sunlight) may cause polymerization.

An uncontrolled polymerization may produce a rapid release of energy with the potential for an explosion of unvented closed containers.

Incompatibility:

Avoid contact with acids, bases, oxidizing agents, reducing agents, UV light.

### **Section 11. Environmental Impact**

Environmental Toxicity:

Fathead minnow (*Pimephales promelas*), 96 hour LC50:  
38 mg/l (slightly toxic).

The above Environmental Toxicity data are for a compositionally similar material.

## Section 12. Component Exposure Information

Exposure Limit Information:

Component	Manufacturer		OSHA		ACGIH	
	TWA	STEL	TWA	STEL	TLV	STEL
Butyl methacrylate	50 ppm	75 ppm	None	None	None	None
Isobutyl methacrylate	50 ppm	75ppm	None	None	None	None
Other ester adducts	a	a	a	a	a	a
MEHQ	5 mg/m <sub>3</sub>	None	5 mg/m <sub>3</sub>	None	5 mg/m <sub>3</sub>	None

a = Not required

## Section 13. Personal Protection Measures

Respiratory Protection: A respiratory protection program meeting OSHA 1910.134 and ANSI 288.2 requirements must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the TWA/TLV's listed in the Component Exposure Information Section.

Up to 10 Times the TWA/TLV:

Wear a MSHA/NIOSH approved (or equivalent) half-mask, air purifying respirator.

Up to 100 Times the TWA/TLV:

Wear a MSHA/NIOSH approved (or equivalent) full-facepiece, air-purifying respirator.

Above 100 Times the TWA/TLV or Unknown:

Wear a MSHA/NIOSH approved (or equivalent) self-contained breathing apparatus in the positive pressure mode.

**or**

MSHA/NIOSH approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

Air-purifying respirators should be equipped with organic vapor cartridges.

Eye Protection:

Use chemical splash goggles (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Hand Protection:

Butyl rubber gloves provide protection against permeation. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.

Other Protection:

Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

## Section 14. Facility Control Measures

Ventilation:

Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (30 m/min.) at the point of vapor evolution. Refer to the current edition of Industrial

Ventilation: A Manual of Recommended Practice, published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Other Protective Equipment:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

## **Section 15. Storage and Handling Information**

Storage Conditions:

Store out of direct sunlight in a cool place. Avoid temperature extremes during storage; ambient temperature preferred. Material can burn; limit indoor storage to approved areas equipped with automatic sprinklers. Total absence of oxygen will activate the inhibitor. Do not store under oxygen-free environment. Leave air space over liquid surface in all containers introducing air periodically if stored more than 6 months. Use monomer within 1 year.

Handling Procedures:

Ground all containers when transferring material.

Other: CONTAINERS HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue (vapors and/or liquid) follow all MSDS and label warnings even after container is emptied.

## **Section 16. Waste Disposal**

Procedure:

After the addition of excess inhibitor, incinerate liquid and contaminated diking material in accordance with local, state, and federal regulations.

## **Section 17. Workplace Classifications**

This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

## **Section 18. Transportation Classifications**

US DOT HAZARD CLASS: Combustible liquid

The above information applies to the U.S. DOT Classification of this material (49 CFR 172.101). Various exemptions and/or restrictions may apply.

## **Section 19. Emergency Planning & Community Right-to Know (SARA Title 3)**

Section 311/312 Categorizations (40CFR 370):

This product is a hazardous chemical under 29CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability and reactivity physical hazard.

Section 313 Information (40CFR 372):

This product does not contain a chemical which is listed in Section 313 above de minimis concentrations.

## **Section 20. CERCLA Information (40CFR 302.4)**

Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under

the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304.

**Section 21 RCRA Information**

When a decision is made to discard this material as supplied, it is classified as an RCRA hazardous waste with the characteristic of ignitability, hazardous waste number: D001.

**Section 22. Chemical Control Law Status**

All components of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

**Section 23. Abbreviations**

ACGIH = American Conference of Governmental Industrial Hygienists

OSHA = Occupational Safety and Health Administration

TLV = Threshold Limit Value

PEL = Permissible Exposure Limit

TWA = Time Weighted Average

STEL = Short-term Exposure Limit

BAC = Butyl acetate

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