

# SAFETY DATA SHEET

## SECTION 1. IDENTIFICATION



Great Lakes Orthodontics  
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CHEMTREC: 800-424-9300

**Product Name:** Biocryl Monomer Resin  
**Product Number:** 040-022, 040-024, 040-026, 040-033, 040-034, 040-049  
KITS: 040-013, 040-014, 040-015, 040-016, 040-030, 040-031

Effective Date: 5/12/16

## SECTION 2. HAZARDOUS IDENTIFICATION

### Classification

- Flammable Liquids – Category 2
- Skin Corrosion / Irritation – Category 2
- Skin Sensitization – Category 1
- Specific Target Organ Toxicity – Single Exposure (Respiratory) – Category 3

**Single Word** – Danger

### Hazard Statements –

H225 – Highly flammable liquid and vapor  
H315 – Causes skin irritation  
H317 – May cause an allergic skin reaction  
H335 – May cause respiratory irritation



**Appearance** – Clear or slightly tinted

**Physical State** – Liquid

**Odor** - Acrid

**Precautionary Statements** – Prevention

- P210 – Keep away from heat / sparks / open flames / hot surfaces. No smoking.
- P233 – Keep container tightly closed.
- P240 – Ground / bond container and receiving equipment.
- P241 – use explosion – proof electrical / ventilating / lighting / equipment
- P242 – Use only non-sparking tools.
- P243 – Take precautionary measures against static discharge.
- P261 – Avoid breathing dust / fume / gas / mist / vapors / spray.
- P264 – Wash hands thoroughly after handling.
- P271 – Use only outdoors or in a well-ventilated area.
- P272 – Contaminated work clothing should not be allowed out of the workplace.
- P280 – Wear protective gloves / protective clothing / eye protection / face protection.

**Precautionary Statements** – Response

- P303 + P361 + P353 – IF ON SKIN (or hair): Remove / take off immediately all contaminated clothing. Rinse skin with water / shower.
- P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312 – Call a POISON CENTER or doctor / physician if you feel unwell.
- P333 + P313 – If skin irritation or rash occurs: Get medical advice / attention.
- P362 – Take off contaminated clothing and wash before use.
- P370 + P378 – In case of fire: Use Co<sub>2</sub>, for extinction.

**Precautionary Statements** – Storage

- P403 + P233 – Store in a well-ventilated place. Keep container tightly closed.
- P403 + P235 – Store in a well-ventilated place. Keep cool.

**Precautionary Statements** – Disposal

- P501 – Dispose of contents / container in accordance with local regulation.

**Hazardous Component(s) for labeling** – Contains Methyl Methacrylate

**Hazards not otherwise classified (HNOC)** May be harmful if swallowed.

**Other Information** – Harmful to aquatic life.

**SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS**

<b>Hazardous Components</b>	<b>CAS #</b>	<b>EINECS</b>	<b>%</b>	<b>Hazard Symbol</b>	<b>R Phrases</b>
Methyl Methacrylate	80-62-6	2012971	>95	F, Xi	11;36/37/38;43
99-97-8 N,N-dimethyl-p-toluidine			<2	T	23/24/25;33;52/53

**SECTION 4. FIRST AID MEASURES****Eye Contact**

Irrigate with eyewash solution or clean water, holding the eyelids apart for at least 15 minutes. Obtain immediate medical attention.

**Skin Contact**

Remove contaminated clothing. Wash skin immediately with water. If symptoms (irritation or blistering) occur obtain medical attention.

**Inhalation**

Remove patient from exposure, keep warm and at rest. Obtain immediate medical attention.

**Ingestion**

If ingested, do not induce vomiting. If product has been swallowed, drink plenty of water or milk immediately. Never give anything by mouth to an unconscious person. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed. Obtain immediate medical attention.

**Treatment**

Treat symptoms conventionally, after thorough decontamination.

**SECTION 5. FIRE FIGHTING MEASURES****Suitable Extinguishing Media**

Chemical Foam, Dry chemical, Carbon Dioxide (CO<sub>2</sub>)

**Special Fire Fighting Procedures**

Highly flammable. When involved in a fire, this product may ignite readily and decompose to produce carbon oxides. Vapors of this product are heavier than air and may travel to a source of ignition and flash back to a leaking or open container. Do not enter fire area without proper protection. Fight fire from a safe location. Heat / impurities may cause pressure to build and/or rupture closed containers, spreading fire, increasing risk of burns / injuries. A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

**Unusual Fire / Explosion Hazards**

For bulk size > 1L – High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat / pressure. Closed containers may rupture or explode during a runaway polymerization. Use a water spray or fog to reduce or direct vapors. Water may not be effective in actually extinguishing a fire involving this product.

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

### **Spill and Leak Procedures**

Eliminate sources of ignition. Ensure suitable personal protection (including respiratory protection) during removal of spillages. Prevent entry into drains. Adsorb spillages onto sand, earth, or any suitable adsorbent material. Do not absorb onto sawdust or other combustible materials. Use only non-sparking tools for recovery and cleanup. Maximize ventilation (open doors and windows) and secure all sources of ignition. Transfer to a container for disposal or recovery. Wash all affected areas with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

## **SECTION 7. HANDLING & STORAGE**

### **Storage temperature**

Preferably not exceeding 25 °C.

### **Handling Precautions**

Observe precautions found on the label. Close container after each use. Ground all metal containers when transferring. Use explosion-proof equipment. Avoid contact with skin and eyes. Avoid inhalation of high concentration of vapors. Use only in well ventilated areas. The vapor is heavier than air; beware of pits and confined spaces. Take precautionary measures against static discharges.

### **Storage Precautions**

Keep only in original container. Store in cool, dry place away from heat, sparks, flame, and direct sunlight, other light sources, or sources of intense heat. Keep container closed to prevent water absorption and contamination. Keep away from sources of ignition – No Smoking. Methacrylate stored in bulk must be kept in contact with air (oxygen).

### **Further Info on Storage Conditions**

Monomer vapors are uninhibited and may form polymers in vent or flame arresters, resulting in blockage of vents.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Ventilation Measures

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

### Respiratory Protection

Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. A suitable mask with filter type A may be appropriate. If necessary, use only respiratory protection authorized per U.S. OSHA's requirement in 29 CFR SS 1910.134 or other appropriate governing standard.

### Hand Protection

If anticipated that prolonged and repeated skin contact will occur during use of this product, wear chemical resistant gloves for routine industrial use. If necessary, use only protection authorized per U.S. OSHA's requirement in 29 CFR SS 1910.138 or other appropriate governing standard.

### Eye Protection

Depending on the use of this product, splash or safety glasses may be worn. If necessary, use only protection authorized per U.S. OSHA's requirement in 29 CFR SS 1910.133 or other appropriate governing standard. Ensure that an eyewash station, sink, or washbasin is available in case of exposure to eyes.

### Skin and Body Protection

Wear suitable protective clothing.

### Occupational Exposure Limits:

<u>Hazardous Ingredient(s)</u>	<u>PEL (OSHA)</u>	<u>TLV (ACGIH):</u>	<u>Recommendation</u>
Methyl Methacrylate	100 ppm	100 ppm	100 ppm

## SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

- **Form** – Liquid
- **Color** – Clear
- **Odor** – Characteristic strong and acrid
- **Flash Point** – 11.5 °C (52.7 °F) (TCC)
- **Boiling Point** - 101 °C (214 °F)
- **Auto Ignition Temperature** - 421 °C (790 °F)
- **Lower Explosion Limit** – 2.12%
- **Upper Explosion Limit** – 12.5%
- **Vapor Pressure (28mmHg)** – 20 °C (68 °F)
- **Solubility in Water** – 1.6 wt.% @ 20 °C (68 °F)
- **Vapor Density (AIR=1)** – 3.5 @ 15.5 °C (60 °F)
- **Percent Volatile (W/W %)** – 99+
- **Viscosity** – Like water
- **Evaporation Rate (BuAc=1)** – 3.1
- **Specific Gravity (H2O=1)** – 0.94
- **Density** – 0.949 g/ml @ 15.5 °C

## SECTION 10. STABILITY & REACTIVITY

**Hazardous Reactions** – Hazardous polymerization may occur.

**Stability** – Unstable / Reactive upon depletion of inhibitor.

**Materials to Avoid** – Strong oxidizers, strong reducers, free radical initiators, inert gases, and oxygen scavengers. Material has strong solvent properties and can soften paint and rubber.

**Conditions to Avoid** – Temperatures above 25 °C, 77 °F, localized heat sources (example drum or band heaters) oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing.

**Hazardous Decomposition Products** – Oxides of carbon when burned.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Toxicity Data:

There is no reason to believe that Methyl Methacrylate represents a carcinogenic or mutagenic hazard to man based upon evidence from well-conducted studies in relevant cohorts. Recent studies in animals have shown that high exposure is maintained at or below the occupational exposure limit.

### Methacrylate

#### **Acute oral toxicity**

- LD50: > 7,900 mg/kg (Rat)

#### **Acute dermal toxicity**

- LD50: > 35,500 mg/kg (Rabbit)

#### **Inhalation Human**

- TCLO: 125 ppm
- TCLO: 60 mg/m<sup>3</sup>
- LC50: 7,094 ppm/4H (Rat)

### N,N-dimethyl-p-toluidine

#### **Acute dermal toxicity**

- LD50: > 2,000 mg/kg (Rat)

#### **Inhalation Human**

- LC50: 2,540 ppm/4H (Rat)

### **Skin Irritation**

May cause sensitization by skin contact. Irritating to skin. Repeated and prolonged contact may cause dermatitis.

### **Eye Irritation**

Irritating to eyes. High vapor concentration will cause irritation.

### **Inhalation**

Irritating to respiratory system. High atmospheric concentrations may lead to irritation of the respiratory tract, dizziness, headache, and anesthetic effects.

### **Ingestion**

Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.

### **Target Organs for Methyl Methacrylate**

Repeated exposure to high levels produces effects on the nose, liver, and kidneys.

## **SECTION 12. ECOLOGICAL INFORMATION (non-mandatory)**

### Aquatic Toxicity:

#### **Methyl Methacrylate**

- LC50: 130 mg/L, 96h (Fathead minnow)
- EC50: 69 mg/L, 48H (Daphnia Magna)
- LC50: 170 mg/L, 96H (Algae)

#### **Environmental Fate**

- 28 Day Biodegradation Study: Not readily biodegradable.
- Chemical Oxygen Demand (COD) 88% (28 days).
- Inherent Biodegradation: Dissolved Organic Carbon Removal (DOC Removal) > 95% (28 days).
- Adsorption / Desorption: High Mobility in soil.

## **SECTION 13. DISPOSAL CONSIDERATIONS (non-mandatory)**

### **Waste Disposal Method**

When discarded it is a hazardous waste by the EPA under RCRA. The reportable quantity (RQ) for Methyl Methacrylate is 1000lbs (40 CFR Part 302). After addition of excess inhibitor, dispose waste material in accordance with Federal, State, and Local Regulations.

Reuse of empty drums or containers is not recommended. Employees should be advised of the potential hazards, due to residual flammable material, associated with empty containers. Dispose of all empty containers properly, in accordance with Federal, State, and Local regulations.

## **SECTION 14. TRANSPORT INFORMATION (non-mandatory)**

- **DOT / UN Shipping Name:** Flammable liquid, n.o.s.  
(Methyl Methacrylate monomer, stabilized / N,N-dimethyl-p-toluidine solution)
- **NA / UN Number:** UN1993
- **DOT / Unclass:** 3
- **Packing Group – II**
- **Label – Flammable liquid**
- **IMDG Class – 3**
- **CERCLA RQ – 1000lbs**

## **SECTION 15. REGULATORY INFORMATION (non-mandatory)**

### EC Regulations

EINECS – all chemical listed

ECC Classification – Highly Flammable and Irritant.

Symbol: Indication of danger

- F – Highly Flammable
- Xn – Harmful

### Risk Phrases

- R11 – Highly flammable
- R20/21/22 – Harmful by inhalation, and in contact with skin.
- R33 – Danger of cumulative effects.
- R43 – May cause sensitization by skin contact.

### Safety Phrases

- S3 – Keep in a cool place.
- S7 – Keep container tightly closed.
- S9 – Keep container in well ventilate place.
- S16 – Keep away from sources of ignition. No smoking.
- S20 – When using do not eat or drink.
- S24 – Avoid contact with skin.
- S29 – Do not empty into drains.
- S37/39 – Wear suitable gloves and eye/face protection.
- S46 – If swallowed, seek medical advice immediately and show this container or label.

### Canadian Regulations

DSL – included

**WHMIS Classification –**

- B2 – Flammable Liquid
- D2B – Irritant

This product has been classified according to the hazard criteria of the CPR and the SDS contains all of the information required by CPR. None of the components of this product are listed on the Priorities Substances List.

**TSCA Inventory Status -** The components of this product are listed on the TSCA Inventory.

**Other Federal Requirements –** This product complies with the appropriate sections of the U.S. FDA's 21 CFR.

**State Regulatory –** This product may contain components that are covered under specific state criteria.

**SARA Reporting Requirements –** Yes

**SARA Threshold Planning Quantity –** There are specific Threshold Planning Quantities for the components of this product.



<b>SECTION 16. OTHER INFORMATION (non-mandatory)</b>
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HMIS Rating:

- **Health** – 2
- **Flammability** – 3
- **Reactivity** – 2
- **Personal Protective Equipment** – Gloves and safety glasses or chemical splash goggles.

NFPA Rating

- **Health** – 2
- **Flammability** – 3
- **Reactivity** – 2

0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe

\* = Chronic Health Hazard