

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION



Great Lakes Orthodontics
200 Cooper Ave
Tonawanda, NY 14150

716-871-1161
800-828-7626
CHEMTREC: 800-424-9300

Product Name: Rainbow Resin
Product Number: 045-002, 045-003, 045-004, 045-005, 045-006, 045-007, 045-008, 045-009, 045-010
045-040, 045-086, 045-087, 045-092, 045-093

Effective Date: 7/12/17

SECTION 2. HAZARDOUS IDENTIFICATION

Classifications

Flammable liquids	Category 2
Skin Corrosion / Irritation	Category 2
Skin Sensitization	Category 1
Specific Target Organ Toxicity – Single Exposure	Category 3

Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor
Causes skin irritation
May cause an allergic skin reaction
May cause respiratory irritation



Precaution Statements

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

Precautionary Statements – Response

IF ON SKIN (or hair) – Remove / take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED – Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
If skin irritation or rash occurs get medical advice / attention.
Take off contaminated clothing and wash before use.
In case of fire, use CO2 for extinction.

Precautionary Statements – Storage

Store in a well ventilated place. Keep container tightly closed.
Store in a well ventilated place. Keep cool.

Precautionary Statements – Disposal

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

<u>Hazardous Components</u>	<u>CAS #</u>	<u>Weight - %</u>	<u>Trade Secret</u>
Methyl Methacrylate	80-62-6	>95	*
N, N-dimethyl-p-toluidine	99-97-8	< 2	*

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 (CO₂)

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 absorbent material. Do not adsorb 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

Industrial Hygiene

Avoid contact with skin, eyes, clothing, and prolonged contact with the product. Wash face and hands thoroughly with the soap and water after use and before eating, drinking, smoking, or applying cosmetics. Do not eat, drink, or smoke while handling product.

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 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 by 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 respiratory 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 or goggles may be worn. If necessary, use only respiratory protection authorized per U.S. OSHA's requirement in 29 CFR SS 1910.138 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. Remove contaminated clothing, washing thoroughly before reuse.

Additional Protective Measures

Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

Occupational Exposure Limits:

Hazardous Ingredient(s)	PEL(OSHA)	TLV (ACGIH)	Recommendation
Methyl Methacrylate	100 ppm	100 ppm	100 ppm

SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

- **Form** – Liquid
- **Appearance** – Clear or slightly tinted
- **Odor** –Acrid
- **Evaporation Rate** – (BuAc=1) 3.1
- **Flash Point** – 11.5 °C (52.7 °F) (TCC)
- **Lower Explosion Limit** – 2.12%
- **Upper Explosion Limit** – 12.5%
- **Auto Ignition Temperature** – 421 °C (790 °F)
- **Vapor Density (AIR=1)** – 3.5 @ 15.5 °C (60 °F)
- **Solubility in Water** – 1.6 wt% @ 20 °C (68 °F)
- **Approximate Boiling Range** – 214 °F at 760mm/hg
- **Percent Volatile** – 99+
- **Density** – 0.949 g/ml @ 15.5 °C
- **Specific Gravity (H2O=1)** – 0.94

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 21 °C, 70 °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

Routes of Exposure

Inhalation – Harmful if inhaled.

Eye Contact – Causes severe eye irritation

Skin Contact – Causes skin irritation

Ingestion – May be harmful if swallowed

<u>Component</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Inhalation LC50</u>
Methyl Methacrylate	7872 mg/mk (rat)	> 5 g/kg (rabbit)	400 ppm (rat) 1 h 4632 ppm (rat) 4 h
N, N-Dimethyl-p-toluidine	1650 mg/k	-	1400mg/m ³ (rat) 4 h

Symptoms – Physical, chemical, and Toxicological

Contact may cause irritation and redness. Exposed individuals may experience eye tearing, redness, and discomfort. Prolonged exposure in poorly ventilated area may cause respiratory irritation.

Immediate effects as well as chronic effects from short and long term exposure

Sensitization

May cause allergic skin reaction

Carcinogenicity

Not classifiable as a human carcinogen

Methyl Methacrylate

IARC (International Agency for Research on Cancer) – Group 3 IARC components are “not classifiable as human carcinogens.

STOT – Single Exposure

May cause respiratory irritation. May cause drowsiness or dizziness.

STOT – Repeated Exposure

No evidence for hazardous properties.

Numerical Measures of Toxicity – Product

Not determined

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix – Oral 3,082 mg/kg **Dermal** 5,107 mg/kg **Inhalation-dust/mist** 6848 ppm

SECTION 12. ECOLOGICAL INFORMATION (non-mandatory)

Aquatic Toxicity – Methyl Methacrylate

- LC50: 130 mg/L, 96H (Flathead Minnows)
- EC50: 69 mg/L, 48H (Daphnia Magna)
- LC50: 170 mg/L, 96H (algae)

Environmental Fate – Methyl Methacrylate

- 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 1000 lbs. (40 CFR Part 302). After addition of excess inhibitor, dispose of 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:** UN 1993
- **DOT/UNCLASS:** 3
- **Packing Group:** II
- **Label:** Flammable Liquid
- **IMDG Class:** 3
- **CERCLA RQ:** 1000 lbs

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
- R36/37/38 Irritating to eyes, respiratory system and skin.
- 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.
- 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
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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.

SECTION 16. OTHER INFORMATION (non-mandatory)

HMIS Rating:

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

NFPA Rating

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

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

* = Chronic Health Hazard