



**SAFETY DATA SHEET
 HEAT-CURING ACRYLIC MONOMER
 DPDDFS-028**

1. IDENTIFICATION OF PRODUCT




- 1.1 Chemical Name: Methyl methacrylate.
- 1.2 Generic Name: Methyl methacrylate (stabilized).
- 1.3 Synonyms: MMA, acrylic liquid, monomer.
- 1.4 Recommended use and product use restrictions: The product is intended for dental use in the preparation of dental prostheses. It must be used by trained dental personnel (dentists and dental laboratorists).
- 1.5 Emergency number: in emergency cases contact the Safety and Health at Work Coordination at the following numbers (57 60 4) 403 87 60, ext. 1304, 1306.

2. IDENTIFICATION OF HAZARDS

2.1 GHS Classification:

Health	Environment	Physical
- Acute toxicity: LD ₅₀ Oral and cutaneous: Category 5 LC ₅₀ inhalation: Category 5 - Corrosion: Category 2 - Ocular irritation: Category 2A - Respiratory or cutaneous sensitization: Category 1 - Systemic toxicity in specific organs: Category 2	Acute toxicity: Category 3	Flammable liquid: Category 2

2.2 GHS Labelling:

Symbol	Warning word	Hazard indication
N.A.	Warning	Harmful in case of ingestion (swallowing). Harmful in contact with the skin (dermal). Harmful if inhaled (gas, vapor, powder, mist).
	Warning	May causes skin irritation. Causes serious ocular irritation.
	Danger	May cause symptoms of allergy or asthma and breathing difficulties if is inhaled.
	Warning	May causes damages in organs by long term or repetitive exposures.


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Symbol	Warning word	Hazard indication
N.A.	N.A.	Harmful to aquatic life.
	Danger	Combustible liquid.

- 2.3 Caution indications: It is a stable liquid in normal temperature and pressure conditions. A dangerous polymerization may occur if it is contaminated with peroxides, metal salts, polymerization initiators or catalysts. Its vapors do not have narcotic effect; however, it can produce ocular, skin and respiratory irritation.
- 2.4 Appearance in emergencies: Colorless liquid; irritant and pungent odor.
- 2.5 Potential adverse effects: Possible sensitizing effects after skin contact. Long-term skin contact can cause dermatitis. High concentrations of this product in the atmosphere can produce irritation of the respiratory tract.
- 2.6 NFPA:



- 2.7 OSHA regulatory state: This material is considered as a dangerous material by OSHA HCS (29 CFR 1910.1200).

OSHA	
Exposure Limit	Time
100 ppm	8 hours
22 ppm	15 minutes
600 ppm (max)	5 minutes

3. INFORMATION ABOUT COMPOSITION

HAZARDOUS COMPONENTS		
Common name	Concentration	CAS Number
Methyl methacrylate	> 95 %	80-62-6

NON-HAZARDOUS COMPONENTS		
Common name	Concentration	CAS Number
None	None	None

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4. FIRST AID MEASURES

4.1 Emergency procedures and first aid after:

- Inhalation: Take the patient to a ventilated area.
- Eye Contact: Wash immediately the patient's eyes with plenty of water while keeping patient's eyelids completely open. See the ophthalmologist.
- Skin Contact: Wash immediately the skin with plenty of water. Take off contaminated clothing. If any symptom (such as irritation or blisters), see the doctor.
- Ingestion: Drink plenty of water. See the doctor. Do not incite the vomit.

4.2 More important symptoms/effects (acute and/or delayed): It can produce allergy or irritations symptoms in the respiratory tract if it is inhaled.

4.3 Antidote: Not applicable.

4.4 Information for doctors: Not applicable.

5. FIRE FIGHTING MEASURES

5.1 Flammability properties: This product is highly flammable. It produces vapors heavier than air and makes exploding mixtures in room temperature. In case of fire, it can produce dangerous toxic gases. If closed containers filled with this product are heated, they may explode.

5.2 Suitable extinction of fire: Use fire extinguishers such as CO₂, foam and/or powder.

5.3 Unsuitable extinction of fire: Water. The use of water cannot be effective to extinguish the fire. Liquid Splatters can result from the sprayed with water.

5.4 Instructions for fire extinguishing: Use special protective equipment. In long stays in the contaminated area, use an autonomous breathing equipment and adequate protective clothing.

5.5 Firefighter's protection: Properties and possible dangers from the material:

- The containers can be broken and liberate toxic vapors.
- A dangerous polymerization can occur due to the high temperatures.
- In case of fire, the containers can be broken violently.

5.6 Protection equipment and firefighter's protection: Must be used autonomous self-contained breathing equipment and encapsulated suit.

Evacuate the affected area and attack the fire at a safe distance.

6 ACCIDENTAL RELEASE MEASURES

6.1 Techniques, procedures, materials and protective equipment in case of:

- Small spill: Absorb spilled product using sand, earth or another absorbent material deemed adequate. Do not absorb with sawdust or combustible materials. Put all the absorbed material in an adequate container for its later disposal.

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- Large spill: Avoid the spilled product to penetrate drainage channels. Absorb spilled product using sand, earth or another absorbent material deemed adequate. Do not absorb with sawdust or combustible materials. Put all the absorbed material in an adequate container for its later disposal. Uncontrolled throwing of waste of this product into waterways must be communicated to competent authorities.
- 6.2 Environmental cautions: Avoid penetration of channeling in the ground and the water grounds. In case of produce large spills or contaminating lakes, rivers or seas, communicate to competent authorities, according to local regulations.
- 6.3 Further considerations: This product must be used only in ventilated areas. Avoid accumulation of electrostatic charges. Avoid penetration of this product in surface or underground waterways.

7 HANDLING AND STORAGE OF PRODUCT

- 7.1 Handling: Please follow recommendations for firefighting given above. This product must be kept away from fire sources.
- 7.2 Storage: Keep the product in a cool, dry, and well-ventilated area, away from flames or spark sources, heat and direct sunlight. Do not smoke. It must be stored far from oxidizing agents, acids, bases or polymer initiators. Do not storage for long time periods beyond its expiration date. Keep the product covered at 30 °C maximum.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

- 8.1 Conditions to control the exposure: Use adequate breathing equipment, safety glasses, and gloves.
- 8.2 Engineering controls: Adequate ventilation, air extractor, showers and eye washes in the areas where the product is used.
- 8.3 Personal protective equipment:
 - Breathing equipment: Use adequate protective equipment. To prevent exposure to concentration values beyond the limits of occupational exposure, use an adequate face mask with a type a filter. In presence of high concentration of vapors, use autonomous breathing equipment.
 - Eye Protection: For complete protection, use safety glasses and a total-protection face screen.
 - Gloves: Use adequate gloves. Adequate gloves are those that combine at least the following features: physical resistance, required sensibility, and permeability degree of material. Laminated PVA/Polyethylene or PVA-covered gloves have a high permeability degree. Butyl or Nitrile rubber gloves provide a certain protection, but they must be replaced immediately if there has been exposure. Chirurgical latex gloves provide scarce protection against this product. Gloves must be replaced regularly and specially in case of excessive exposure.
 - Others: Use adequate protective dress.

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8.4 Exposure parameters:

- PEL (OSHA): 100 ppm, 410 mg/mm³, 8 h, TWA.
- TLV ACGIH: 100 ppm, 410 mg/mm³, 8 h, TWA.

9 PHYSICAL AND CHEMICAL PROPERTIES OF THIS PRODUCT

- Appearance or shape: Liquid.
- Color: Clear, colorless.
- Odor: Strong characteristic odor.
- Odor Threshold (ppm): 0.5 – 1.0 ppm.
- pH: Not available.
- Evaporation percentage: Not available.
- Evaporation rate: > 1.00
- Density: 0.945 g/ml at 20°C (68 °F).
- Solubility in water: 1.6g /100g at 20°C (68 °F).
- Solubility in solvents: Mixable with most organic solvents.
- Boiling Point: 100.5°C (213 °F).
- Melting Point: -48°C (-54.4 °F).
- Inflammability Point (closed cup): 10°C (50 °F).
- Inflammability (solid gas): Not relevant (fluid).
- Lower inflammability limit (% v/v): 2.1.
- Upper inflammability limit (% v/v): 12.5.
- Self-ignition Temperature: 421°C (790 °F).
- Exploding Features: Not applicable.
- Vapor Pressure (Pascal): 3600 at 20°C (68 °F).
- Minimum Ignition Energy (mJ) 0.89 – 0.97 at 23°C (73.4 °F).
- Vapor Density (Air=1): 3.5.
- N-octanol/water partition coefficient: Low Pow: 1.38.
- Decomposition temperature: Not available.
- Heat value: Not available.
- Particle size: Not Applicable.
- Volatile organic compound content: Not available.
- Softening point: Not applicable.
- Viscosity: 0.530 MPa.s at 20°C (68°F)
- Bulk density: Not applicable.
- Volatility percentage: Not available.
- Concentration of saturated vapor: Not available.
- Molecular weight: 100.121 g/mol.
- Molecular Formula: C₅H₈O₂.

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10 STABILITY AND REACTIVITY

- 10.1 Chemical Stability: This product is stable until its self-ignition temperature.
- 10.2 Possibility of hazardous reactions: dangerous polymerization in case of heat exposure.
- 10.3 Conditions to Avoid: Prolonged heating or a catalyst can initiate polymerization of this product.
- 10.4 Incompatibility with other materials: Peroxide and Azo polymer initiators, strong acids, alkalis, and oxidizing agents. Additionally, bases, acids, and flammable solvents.
- 10.5 Dangerous Breaking down Products: Vapors heavier than air that tend to accumulate themselves form flammable mixtures.
- 10.6 Dangerous Polymerization: Exothermic reactions (production of heat).

11 TOXICOLOGICAL INFORMATION

- 11.1 Possible routes of exposure: Respiratory, dermal, ocular and some organs when exposed to high concentrations in prolonged times.
- 11.2 Acute Toxicity: Inhalation: This product irritates the respiratory tract. High concentrations of this product in the atmosphere can irritate the respiratory tract and produce dizziness, headache, and anesthetic effects. Skin Contact: Possible sensitivity after skin contact, Irritation of skin, Repeated and/or long-term skin contact can cause dermatitis. Eye Contact: High concentrations of this product can irritate the eyes. Swallowed: This product has low oral toxicity, but if swallowed, it can irritate the gastrointestinal tract.
- 11.3 Chronic Toxicity: Long-term exposure repeated exposure to high concentrations of this product can cause adverse effects on heart, lungs, liver, and kidneys. According to different studies, there is no reason to think that Methyl Methacrylate represents a carcinogenic or mutagenic risk for people. Long-term exposures of pregnant mothers do not produce either toxic effects on embryos or fetus or teratogenic effects.
- 11.4 Additional information: Not applicable.

12 ECOLOGICAL INFORMATION:

- 12.1 Eco-toxicity:
 - Low toxicity for fish.
 - CL50 (fish) typically > 100 mg/L.
 - CE50 (Daphnia magna) (48 hours) 69 mg/L.
 - Low toxicity for algae.
 - CE50 (Selenastrm Capricornutum) (96 hours) 170 mg/L.

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- 12.2 Persistence and degradability: Easily biodegradable. Chemical Oxygen Demand (COD) 88% (28 days). Elimination of the diluted organic carbon > 95% (28 days).
- 12.3 Bio-accumulation potential: High volatility liquid. The product is limited soluble in water. Low bioaccumulation potential.
- 12.4 Mobility in soil: It is foreseeable that it has high mobility on ground.
- 12.5 Other adverse effects: Not applicable.

13 DISPOSAL CONSIDERATIONS

Do not throw waste material of this product into waterways. Waste disposal of this product must be in accordance with regulations into effect in each country.

WARNING: Laws, regulations and local restrictions can change or be reinterpreted from one country and also, they can be different from the ones being into effect in Colombia. This is why considerations about waste disposal of product and its packing may differ from the ones appearing in this document.

14 TRANSPORT INFORMATION

- 14.1 Hazardous material: Methyl methacrylate.
- 14.2 Type of Risk: Flammable.
- 14.3 UN Number: 1247.
- 14.4 IATA Classification: 3.
- 14.5 Packing group: Class 3, packing group II.
- 14.6 Marine pollutant (Yes/No): No.

15 INFORMATION ABOUT REGULATIONS INTO EFFECT

- 15.1 In Colombia: Transportation of this product must be made according to provisions of Decree 1609 of 2002 concerning road transportation of chemical and dangerous substances.
- 15.2 International Regulations: This product must be labeled according to directives of the EEC/Regulations on dangerous substances.

16 IMPORTANT ADDITIONAL INFORMATION

The information in this document is based on our current knowledge and it is given in good faith, but is not given an assurance express or implicit, neither is assumed any responsibility for the incorrect use of the product. This document is prepared according to:

- GHS –Globally Harmonized System of Classification and Labelling of Chemicals.
- NTC – Colombian Technical Norm 4435:2010 Merchandise Transport. Safety Data Sheets for Materials. Preparation.

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