

SAFETY DATA SHEET
ACRYLIC MONOMER SELF POLYMERIZED
DPDDFS-029

1 IDENTIFICATION OF PRODUCT



- 1.1 Chemical name: Methyl methacrylate.
- 1.2 Generic name: Methyl methacrylate (stabilized).
- 1.3 Synonyms: MMA, liquid acrylic, monomer.
- 1.4 Recommended use and product use restrictions: The product is intended for the elaboration of dental prosthesis. It must be used by trained dental personnel only (dentists and laboratorists).
- 1.5 Emergency number: In case of emergency contact the Coordination of Safety and Health at the Workplace (+57 60 4) 403 87 60, ext. 1304, 1306.

2 HAZARD IDENTIFICATION

2.1 GHS Classification:

Health	Environmental	Physical
Acute toxicity LD ₅₀ oral and dermal: Category 5 LC ₅₀ inhalation: Category 5		
Corrosion Category 2		
Ocular corrosion Category 2 ^a	Aquatic toxicity Category 3	Flammable liquid Category 2
Respiratory or dermal sensitization Category 1		
Systemic toxicity in specific organs Category 2		

2.2 GHS Labelling:

Symbol	Warning word	Indication of hazard
N.A.	Warning	It can be harmful in case of ingestion (swallowing). It can be harmful in contact with skin (dermal). It can be harmful if it's inhaled (gas, vapor, powder, mist)
	Warning	It can cause skin irritations. Cause severe ocular irritation.
	Danger	It can cause symptoms of allergy, asthma or breathing difficulties if inhaled.



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Symbol	Warning word	Indication of hazard
	Warning	It can cause harmful for organs (lungs, kidneys and liver) after prolonged or repetitive expositions.
N.A.	N.A.	Harmful for aquatic life.
	Danger	Flammable liquid.

- 2.3 Caution instructions: Stable liquid under temperature conditions and pressure. Hazardous polymerization or explosion may occur if it is contaminated with peroxides, metal sales, polymerization initiators or polymerization catalysts. Its vapors have no narcotic effect. However, they can cause eye irritation, skin and respiratory tract.
- 2.4 Appearance in emergencies: Colorless liquid; irritant and pungent odor.
- 2.5 Potential adverse effects: May cause sensitization by skin contact, prolonged contact may cause dermatitis. At high amounts in the atmosphere, it can lead to irritation in the respiratory tract.
- 2.6 NFPA:



- 2.7 OSHA regulatory state: This material is considered hazardous for OSHA HCS (29 CFR 1910.1200).

OSHA	
Exposition limit	Time
100 ppm	8 hours
22 ppm	15 minutes
600 ppm (maximum)	5 minutes

3. INFORMATION ABOUT COMPOSITION

HAZARDOUS COMPONENTS		
Common name	Concentration	CAS Number
Methyl methacrylate	> 95%	80-62-6
Tertiary amine	< 2,5%	Not available

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

4. FIRST AID MEASURES

4.1 Emergency procedures and first aid in case of:

- 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.

4.2 Most important symptoms/effects (acute and/or delayed): May cause allergy symptoms or respiratory tract irritation if inhaled. May cause damage to organs (lungs, kidneys and livers) through prolonged or repeated exposure.

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: CO₂, foam and/or powder.

5.3 Unsuitable extinction of fire: Water may be not effective in extinguishing fire. Liquid splashes may result from water spray.

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 Firefighters' protection: Properties and possible hazards of the material:

- Containers can break and release toxic vapors.
- Hazardous polymerization may occur due to high temperatures.
- Closed containers may break violently, in case of fire.

5.6 Protective equipment and fire fighters' protection: Self-contained breathing apparatus and encapsulated suit should be used. Evacuate the affected area and attack the fire at a safe distance.

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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 or recovery.
- 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 or recovery. Uncontrolled throwing of waste of this product into waterways must be communicated to correspondent competent authorities.

6.2 Environmental precautions: Avoid filtering on land and in water. In case of large spills or if the product contaminates lakes, rivers or seas inform the competent authorities, according to local legislation.

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 place. Keep it away from all flame or source of spark, do not smoke. Keep it away from heat and direct sunlight. Store away from oxidants, acids, bases and polymerization initiators. Not stored for long periods of time those exceed the shelf life of the product. Check the product (translucency control). Storage temperature should not exceed 30 °C (86 ° F). Monomer vapors are not inhibited and may form wires in the fans or in the extinguishing flames and may block them. Because of this the containers must be closed.

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 equipment for washing eyes in areas which 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

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with a type A filter. In presence of high concentration of vapors, use autonomous breathing equipment.

- Eye protection: Use safety glasses and a total-protection face screen.
- Gloves: Use adequate gloves. Adequate gloves are those that combine all 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 have to be changed periodically and when excessive exposure has occurred.
- Other: Wear suitable protective clothing.

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**

- Physical appearance or shape: Liquid.
- Color: Clear, colorless.
- Odor: Strong characteristic odor.
- Odor Threshold (ppm): 0.5 – 1.0.
- pH: Not applicable.
- 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).
- Fusion Point: -48 °C (-54.4 °F).
- Flammability Point (closed cup): 10 °C (50 °F).
- Flammability (solid, gas): Not relevant (fluid).
- Lower Flammability limits (% v/v): 2.1.
- Upper Flammability limits (% 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.
- Content of volatile organic compounds: Not available.
- Melting point: Not applicable.

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- Viscosity: 0.530 MPa at 20 °C (68 °F).
- Density (bulk density): Not applicable.
- Volatility percentage: Not available.
- Sutured vapor concentration: Not available.
- Molecular weight: 100.121 g/mol.
- Molecular Formula: C₅H₈O₂.

10 STABILITY AND REACTIVITY

- 10.1 Chemical Stability: Stable until self-ignition temperature.
- 10.2 Possibility of hazardous reactions: Dangerous polymerization in case of heat exposition.
- 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; also: 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 Hazardous polymerization: Exothermic reactions (generation of heat).

11 TOXICOLOGICAL INFORMATION

- 11.1 Possible ways of exposure: Respiratory system, dermal, ocular and some organs when is exposed at high concentrations for 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.
 - Ingestion: 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.

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12 ECOLOGICAL INFORMATION

12.1 Ecotoxicity: Low toxicity for fish.

- Low toxicity for fishes.
- CL50 (fish) typically \leq 100 mg/L.
- CE50 (Daphnia Magna) (48 hours) 69 mg/L.
- Low toxicity in algae.
- CE50 (Selenastrm Capricornutum) (96 hours) 170 mg/L.

12.2 Persistence and degradability: Easily biodegradable. Chemical oxygen demand (COD) 88% (28 days). Elimination of dissolved organic carbon > 95% (28 days).

12.3 Potential of bioaccumulation: Liquid with high volatility. The product is limitedly soluble in water. It has a low bioaccumulation potential.

12.4 Mobility in soil: It is foreseeable that it has high mobility on ground.

12.5 Other adverse effects: Not available.

13 DISPOSAL CONSIDERATIONS

Do not throw it into waterways. See the local regulations applicable into effect.

WARNING: Laws, regulations and local restrictions can change or be reinterpreted from one country to another 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 Risk classification: Flammable.

14.3 UN Number: 1247

14.4 IATA Classification: 3.

14.5 Packing group: Class 3. Group II.

14.6 Marine pollutant (Yes/No): Yes.

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.

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16 IMPORTANT ADDITIONAL INFORMATION

The information registered in this document is based on our current knowledge and 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:

- Globally Harmonized System of Classification and Labelling of Chemicals.
- Colombian Technical Norm NTC4435:2010. Transport of merchandises. Safety Data Sheets for materials. Preparation.

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