



Address: Cra. 53 N° 50-09
Guarne (Antioquia) COLOMBIA
Phone: (574) 550 00 00
Fax: (574) 551 31 34

MATERIAL SAFETY DATA SHEET
ACRYLIC MONOMER SELF POLYMERIZED
DPDDFS-003

1 IDENTIFICATION OF PRODUCT

- 1.1 Chemical Name: Methyl Methacrylate.
- 1.2 Generic Name: (Stabilized) Methyl Methacrylate.
- 1.3 Synonyms: MMA; Acrylic Liquid; Monomer.

2 INFORMATION ABOUT COMPOSITION ELEMENTS

- 2.1 Hazardous Elements: Methyl Methacrylate (CAS 80-62-6); Tertiary Amine.
- 2.2 Non-hazardous Elements: Not applicable.

3 HEALTH HAZARD DATA

- 3.1 Harmful characteristics of material: Highly flammable.
- 3.2 Appearance (in emergencies): Colorless liquid; irritant and pungent odor.
- 3.3 Potential Health Hazards: 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.

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.
 - Swallowing: Drink plenty of water. See the doctor.
- 4.2 Antidote: Not applicable.
- 4.3 Information for doctors: Not applicable.





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5 FIRE FIGHTING MEASURES

- 5.1 Flammability of Product: 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 Extinction of Fire: Use fire extinguishers such as CO₂, foam and/or powder.
- 5.3 Instructions for fire extinguishing: Use special protective equipment. In long stays in the contaminated area, use an autonomous breathing equipment and adequate protective clothing.

6 ACCIDENTAL RELEASE MEASURES

- 6.1 Techniques, procedures and materials 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.
 - 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 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 fire fighting given above. This product must be kept away from fire sources.
- 7.2 Storage: Storage this product in a cool, dry, and well ventilated area. Keep this product away from flames or spark sources. Do not smoke. Keep this product away from heat and direct sunlight. It must be stored far from oxidizing agents, acids, bases or polymer initiators. Do not storage for long periods. Check frequently the product's translucency. Keep constant the inhibitor's



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concentration. For low stabilization monomers (Less than 2 ppm of Topanol A), the storage temperature must be lower than 15°C. Monomer's vapors are not inhibited and can form polymers in presence of fans or fire extinguishers and, in such case; they can originate the blockage of fans.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

- 8.1 How to control exposure to this product: Use adequate breathing equipment, safety glasses, and gloves.
- 8.2 Individual 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.
 - Other: Wear suitable protective clothing
- 8.3 Exposure parameters:
- PEL (OSHA): 100 ppm, 410 mg/mm³, 8 Hr, TWA
- TLV ACGIH: 100 ppm, 410 mg/mm³, 8 Hr, TWA

9 PHYSICAL AND CHEMICAL PROPERTIES OF THIS PRODUCT

- Physical Appearance or State: Liquid.
- Color: Clear, Colorless.
- Odor: Strong characteristic odor.
- Odor Threshold (ppm): 0.5 – 1.0.
- pH: Not applicable.
- 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.



Elaboration: 2009-12-30 **Prepared by:** Analyst product design

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- Boiling Point: 100.5°C (213 °F).
- Melting Point: -48°C (-54.4 °F).
- Flammability Point (closed cup): 10°C (50 °F).
- Lower Flammability Threshold (% v/v): 2.1.
- Upper Flammability Threshold (% 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.
- Molecular Formula: C₅H₈O₂.

10 STABILITY AND REACTIVITY OF THIS PRODUCT

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

11 TOXICOLOGICAL INFORMATION

- 11.1 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.
 - If swallowed: This product has low oral toxicity, but if swallowed, it can irritate the gastrointestinal tract.
- 11.2 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



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exposures of pregnant mothers do not produce either toxic effects on embryos or foetus or teratogenic effects.

12 ECOLOGICAL INFORMATION

- 12.1 Distribution and Environmental Impact: This product is highly volatile. Its solubility in water is scarce. It has a low bioaccumulation potential. It is foreseeable for this product to have a high mobility under the surface of the ground.
- 12.2 Persistence and Degradation: This product is easily biodegradable. Its Chemical Demand of Oxygen (CDO) is 88% (28 days).
- 12.3 Inherent biodegradation: Elimination of dissolve organic carbon in more than 95% lasts 28 days.
- 12.4 Toxicity: Low toxicity for fish. CL50 (fish) typically: > 100 mg/L.
- 12.5 Innocuous for aquatic invertebrates: CE50 (Daphnia Magna) (48 hours) 69 mg/L. Low toxicity for algae. CE50 (Selenastrum Capricornutum) (96 hours) 170 mg/L.
- 12.6 Effects on Effluent Treatment: This product is practically eliminated during biological treatment processes.

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 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 Dangerous material: Methyl Methacrylate
- 14.2 Type of Risk: Flammable
- 14.3 UN Number: 1247
- 14.4 IATA Classification: 3





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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

In case of emergency, please call our Industrial -and- Physical Safety Area, phone n° (574) 550 00 00.

Information appearing in this Safety Data Sheet is based on our current knowledge of this product. Our firm is not responsible for inappropriate usage of this product.



Elaboration: 2009-12-30 **Prepared by:** Analyst product design

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MATERIAL SAFETY DATA SHEET:
ACRYLIC POLYMER SELF POLYMERIZED VERACRIL®/OPTICRYL® POUR, O-CRYL®
DPDDFS-027

1 IDENTIFICATION OF PRODUCT

- 1.1 Chemical Name: Poly (methylmethacrylate).
- 1.2 Generic Name: Poly (methylmethacrylate).
- 1.3 Synonyms: PMMA, Acrylic Resin.
- 1.4 Recommended use and product's restrictions for use: the product is intended for dental use in the preparation of dental prosthetics.
- 1.5 Emergency phone number: in case of emergency contact the coordination of Safety and Health at the Workplace (57 4) 403 87 60, ext. 1304, 1306.

2. HAZARD IDENTIFICATION

2.1 GHS Classification:

Health	Environmental	Physical
Non harmful	Non harmful	Non harmful

2.2 GHS Labeling:

Sign	Warning word	Hazard indication
None required	None required	None required

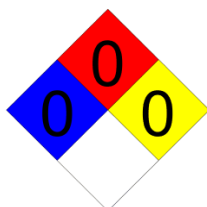
2.3 Caution indication: Does not apply

2.4 Characteristics of material: Odorless fine powder.

2.5 Appearance (in emergencies): Odorless fine powder. If this powder is dispersed in the air, it irritates the eyes.

2.6 Potential Health Hazards: Low oral toxicity. If it is dispersed in the air, it can irritate the eyes. Irritation after skin contact is not known. No adverse health effects are known.

2.7 NFPA:



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3. INFORMATION ABOUT COMPOSITION ELEMENTS

COMPONENTES PELIGROSOS		
Nombre común	Concentración	Número CAS
Ninguno	N.A	N.A
COMPONENTES NO PELIGROSOS		
Nombre común	Concentración	Número CAS
Polimetil metacrilato	90-99%	9011-14-7

4. FIRST AID MEASURES

4.1 Emergency procedures and first aid after...

- Inhalation: Take out the patient from the exposure area and move him/her to a ventilated place. If any harmful effect appears, call the doctor.
- 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. In case of appearance of any symptom (such as irritation or blisters), see the doctor.
- Swallowing: See the doctor.

4.2 Major symptoms/effects (acute and/or delayed): There are not more relevant data available.

4.3 Antidote: Not applicable.

4.4 Information for doctors: Not applicable.

5. FIRE FIGHTING MEASURES

5.1 Flammability of Product: This is a low-flammable product.

5.2 Extinction of Fire: Fire can be extinguished using spray water, foam, dry powder, or CO₂

5.3 Instructions for fire extinguishing: Use special protective equipment. In long stays in the contaminated area, use an autonomous breathing equipment and adequate protective clothing. This product breaks down if heated at temperatures higher than 200°C. The breaking down of this product caused by combustion or overheating can produce irritant and flammable toxic vapors.



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6. ACCIDENTAL RELEASE MEASURES

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

- Small spill: Spilled powder is slippery underfoot. If spilled, use gloves to pick it up and put it in a container for its later disposal or recuperation.
- Large spill: Sweep away the spilled product and put it in a waste drum or in a plastic bag. Wash the slippery area with water. Avoid the spilled product to penetrate drainage channels. Uncontrolled throwing of waste of this product into waterways must be communicated to competent authorities. Use autonomous breathing apparatus and butyl rubber protective gloves.

6.2 Environmental precautions: Avoid penetration of channeling / Surface water / groundwater.

6.3 Further considerations: Avoid penetration of this product in surface or underground waterways.

7. HANDLING AND STORAGE OF PRODUCT

7.1 Handling: DO NOT PUT THIS PRODUCT IN CONTACT WITH HOT MATERIALS to avoid firing. All polymers degrade somehow if overheated. Avoid eye contact. Avoid long-term skin contact. Avoid inhalation of high concentrations of this powder. Please follow fire fighting measures shown above. This product must be kept away from fire sources.

7.2 Storage: Storage this product at room temperature, in a cool area. Containers of this product must always be well sealed.

7.3 Further information: Acrylic resin is delivered in specially packaged drums and bottles. Always keep product containers in a clean and cool area, protected from heat or fire sources.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 How to control exposure to this product: Use a mask to protect yourself from powder. Also use safety glasses, and adequate face protection.

8.2 Engineering controls: There are not any additional data.

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8.3 Individual protective equipment:

- Breathing equipment: Use adequate protective equipment. In case of high levels of exposure, use an adequate mask to protect yourself from powder.
- Eye Protection: For complete protection, use safety glasses and a total-protection face screen.
- Others: Use adequate protective clothing and follow general safety and hygienic measures. Wash your hands after using this product.

8.4 Exposure parameters:

PEL (OSHA): Total powder 5 mg/mm³, 8 Hr, TWA, breathable powder.

TLV ACGIH: Not available.

9. PHYSICAL AND CHEMICAL PROPERTIES OF THIS PRODUCT

- Appearance (physical state, form, colour, etc.): Fine powder in the form of beads, color according to pigmentation.
- Odor: odorless
- Odor threshold: not applicable
- pH: Not applicable
- Vapour pressure: Not applicable
- Vapor density: Not applicable.
- Evaporation speed: Not applicable
- Saturated vapor concentration: Not applicable
- Freezing or merger: (specify which) is not determined.
- Boiling point: Not applicable.
- Solubility in water: Insoluble.
- Solubility in other solvents: Soluble in acetone.
- Specific gravity or density: 1,25g/cm³.
- Bulk density: is not determined.
- Particle size: 75 micrometers.
- Volatile organic compounds content: 0%.
- Percent Volatile: <1%.
- Softening point: No having determined.
- Flash point or explosivity limit 300°C (572 °F).
- Self-ignition temperatura: not applicable
- Decomposition temperatura: Not determined
- Viscosity: It is not determined.
- Partition coefficient octanol/water: It is not determined.



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- Molecular weight: 800.000
- Molecular formula: $(C_5O_2H_8)_n$
- Other: Not applicable.

10. STABILITY AND REACTIVITY OF THIS PRODUCT

10.1 Chemical Stability: This product is very stable. When it is overheated or in presence of a catalyst, a new polymerization process may start again.

10.2 Possibility of hazardous reactions: No hazardous reactions are known.

10.3 Conditions to Avoid: Incompatibility with Peroxide or Azo polymer initiators, strong acids, alkalis, and oxidizing agents; also with bases, acids, and flammable solvents.

10.4 Incompatibility with other materials: Monomers.

10.5 Dangerous Breaking down Products: Monomer Vapors.

10.6 Dangerous Polymerization: Exothermic reactions (that produce heat).

11. TOXICOLOGICAL INFORMATION

11.1 Possible ways of exposure: No additional data are available.

11.2 Acute Toxicity: Inhalation: Health risks after inhalation of this product are not known. High concentrations of this powder can irritate the respiratory tract. High concentrations of vapors originated from overheating can irritate the respiratory tract. Skin Contact: Cases of skin irritation caused by contact with this product are not known. If swallowed: This product has low oral toxicity, but if swallowed, it can irritate the gastrointestinal tract.

11.3 Chronic Toxicity: Long-term exposure: This product has been used during many years without any evidence of adverse effects. According to different studies, there is no reason to think that Polymethyl Methacrylate represents a carcinogenic or mutagenic risk for people. Long-term exposures do not produce either toxic effects on embryos or foetus or teratogenic effects on pregnant mothers.





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12. ECOLOGICAL INFORMATION

- 12.1 Ecotoxicity: low toxicity for fish.
- 12.2 Persistence and degradability: the product is non-biodegradable in ground. There is no evidence of degradation in ground and water.
- 12.3 Bioaccumulation potential: the product is hardly removed in biological treatment processes.
- 12.4 Ground mobility: low movility.
- 12.5 Other adverse effects: There is not additional information.

13. DISPOSAL CONSIDERATIONS

Recycle if possible. Do not throw to water sources. Observe the local regulations in force.

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 Dangerous material: None
- 14.2 Type of Risk: None
- 14.3 UN Number: Not available
- 14.4 Classification: Non-dangerous material
- 14.5 Packing group: not applicable.
- 14.6 Marine pollutant (yes/no): No.

15. INFORMATION ABOUT REGULATIONS INTO EFFECT



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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

In case of emergency, please call our Industrial -and- Physical Safety Area, phone n° (574) 550 00 00.

Information appearing in this Safety Data Sheet is based on our current knowledge of this product. Our firm is not responsible for inappropriate usage of this product.



Prepared by:
Professional Assistant of Research &
Development Division
Elaboration: 2009-12-30
Version: 3

With the approval of:
Head of Industrial Safety Area
Prepared by: Design of Teeth Analyst
Approved by: Design and Development Chief

Revised on:
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