

MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier:

Trade name: **OPTIX (EMBOSSED: PINSPOT, AQUA, GEOMETRIC, LIZARD, CRACKED ICE, K-12, K-10, G-TEC, NON REFLECT / UV-BLOCK / IR-SOLAR / ANTIGLARE / ACRYLED XT, MIRROR / TOP), OPTIX Super / OPTIX HI**

Product name: Extruded Polymethyl Methacrylate (PMMA) Solid Sheets

Material Name: Acrylic Copolymer

CAS number: 9010-88-2

UN number: None

ACX number: X1008843-8

RTECS: TR0400000

Material Synonyms: Acryloid; Methyl methacrylate, polymerized; PMMA; Methyl methacrylate homopolymer; Methyl methacrylate resin; Poly (methyl methacrylate).

NFPA Ratings: Health = 0, Fire = 3, Reactivity = 0

1.2 Relevant identified uses of the product:

Glazing, noise reduction barriers, exterior and interior decoration, artistic and aesthetic applications, and others.

1.3 Details of the supplier:

Supplier: PLASKOLITE

ISRAEL-CORPORATE	NORTH AMERICA - PLASKOLITE INC.	SOUTH AMERICA - PLASKOLITE SUD	EUROPE - PLASKOLITE BULGARIA
Address: Kibutz Gazit 1934000 Israel Tel.: +972 4-662-8885	Address: 1100 Bond St. Charlotte, NC 28208 Tel.: +704 588-3800	Address: Ruta 68-Kilometro 69, Enlace Tapihue S/N, Casablanca VALPARAISO, Chile Tel.: +56-2700 2280 3	Address: Agrobiotech Site Stara Zagora, 6000 Bulgaria Tel.: +359-42615211

Email: plaskolite@plaskolite.com

Website: www.plaskolite.com

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

2.1 Chemical Name: Polymethyl methacrylate copolymers

INGREDIENT NAME	CAS #	TYPICAL WT%	OSHA LISTED
Poly (Ethyl Acrylate/ Methyl Methacrylate)	9010-88-2	99.3 minimum	N
Methyl Methacrylate	80-62-6	<0.7	Y

2.2 Remarks:

Pigments and additives used to enhance specific properties are encapsulated in the polymer resin matter.

No cadmium or other heavy metals based pigments or stabilizers used.

The substance marked with a "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Communication Standard (29 CFR 1910.1200).

SECTION 3: HAZARDS IDENTIFICATION

3.1 Product Overview:

Color: clear

Physical state: solid

Form: sheets

Odor: odourless

Not labelled as hazardous.

CAUTION! PROCESSING MAY RELEASE VAPORS AND/OR FUMES WHICH CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

3.2 Potential Health Effects:

There are no known human health effects aggravated by exposure to this product.

Primary routes of exposure: Inhalation and skin contact.

Signs and symptoms of acute exposure: High molecular weight polymer. The product, in the form supplied, is not anticipated to produce significant adverse human health effects. Product dust may be irritating to eyes, skin and respiratory system.

Effects due to processing releases: Irritating to eyes, respiratory system and skin. Inhalation of fumes may cause flu-like symptoms. (severity of effects depends on extent of exposure) Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness.

3.3 Remarks:

Handle in accordance with good industrial hygiene and safety practice. Secondary operations, such as grinding, sanding or sawing of the sheets, can produce dust which may present a respiratory hazard. This product may release fumes and/or vapor of variable composition depending on processing time and temperature.

SECTION 4: FIRST-AID MEASURES

In general handling the material will not cause accidents.

4.1 Description of first aid measures:

Inhalation: Not likely due to physical form. If inhaled, remove to fresh air.

Skin: In case of contact, immediately flush skin with plenty of water. If molten polymer gets on the skin, cool rapidly with cold water. Do not peel solidified product off the skin. Obtain medical treatment for thermal burns. Remove material from clothing. Wash clothing before reuse.

Eyes: Remove contact lenses at once. Immediately flush eyes well with copious quantities of water or normal saline for at least 20-30 minutes. If irritation persists, seek medical attention.

Ingestion: Not probable. If large amount is swallowed, seek medical attention.

Burns: Burns by molten material must receive medical attention. Do not try to remove melted PMMA from skin.

4.2 Main symptoms:

Dust: Skin irritation, eye irritations and redness.

4.3 Indication of any immediate medical attention and special treatment needed: No

SECTION 5: FIRE-FIGHTING MEASURES

This material burns with difficulty and generally requires a continuous external flame source to sustain combustion. Without flashover fire conditions it will tend to extinguish itself. When forced to burn it will produce a sooty fire.

Main products of combustion are carbon dioxide and carbon monoxide. Some flame-retardant grades will evolve trace quantities of hydrogen bromide on combustion.

Combustion products have been found in independent tests to be essentially non-corrosive.

5.1 Extinguishing media: Dry chemical, water spray, carbon dioxide, foam CO₂. Water spray is recommended due to its cooling capacity.

Firemen must wear self-contained breathing apparatus.

5.2 Extinguishing Media to Avoid:

No information currently available.

5.3 Special Fire Fighting Procedures:

Personnel without suitable respiratory apparatus should leave the affected area to prevent exposure to toxic or combustible gases.

5.4 Special Protective Equipment for Firefighters:

Positive-pressure self-contained breathing apparatus, protective clothing, gas mask approved for acid vapors.

5.5 Fire and Explosion Hazards:

Heated material can form flammable vapors with air.

SECTION 6: ACCIDENTAL RELEASE MEASURES

No special precautions and no personal protective equipment needed. Collect mechanically for disposal.

SECTION 7: HANDLING AND STORAGE

7.1 Handling:

No explosion hazard.

Avoid breathing processing fumes or vapors. Secondary operations such as grinding, sanding or sawing may produce a dust explosion hazard. Avoid breathing dust. Provide adequate ventilation. Avoid mechanical contact with eyes. Handle in accordance with good industrial hygiene and safety practices.

In the event of fire, cool and overlap product with water. The material is not sensitive to static discharge. Static electricity discharge sparks possible during handling. Avoid contact or vicinity of flammable materials.

7.2 Storage:

This material is not hazardous under normal storage conditions. However, all material of this type release some monomer vapors or gases when stored for prolonged periods at elevated temperatures.

Avoid temperature extremes during storage.

Store in a dry place away from moisture, excessive heat and sources of combustion.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

No specific exposure related hazards are known.

8.1 Exposure limits:

Airborne Exposure Guidelines for Ingredients - Methyl Methacrylate

EXPOSURE LIMIT	VALUE
ACGIH Sensitizer designator	Y
ACGIH STEL	100 ppm (410 mg/m ³)
ACGIH TWA	50 ppm (205 mg/m ³) - averaged over 8 hour work shift
OSHA TWA PEL	100 ppm (410 mg/m ³) - averaged over 8 hour work shift
NIOSH TWA	100 ppm (410 mg/m ³) - averaged over 10 hour work shift

Remarks:

- Only those components with exposure limits are printed in this section.
- Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.
- ACGIH Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic reactions.

8.2 Industrial Hygiene/Ventilation Measures:

General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines, especially during cutting, grinding and high heat operations.

8.3 Respiratory protection:

No exposure limit has been established for this product.

8.4 Hand protection:

Wear heat resistant gloves when handling molten material.

8.5 Eye protection:

Safety glasses with side-shields

8.6 Skin and body protection:

No special skin protection requirements during normal handling and use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color: clear

Physical state: solid

Form: sheets

Odor: odourless

pH: not applicable

Density: (20°C) 1.19 kg/m³

Vapor pressure: not applicable

Viscosity: not applicable

Boiling point/boiling range: not applicable

Freezing point: not applicable

Softening temperature: about 102°C

Flash Point: 390°C (ASTM D 1929-68)

Ignition temperature: 465 °C (ASTM D 1929-68)

Decomposition temperature: about 280°C

Solubility in water: insoluble

Solubility (non aqueous): Benzene, Acetone, Methyl Ethyl Ketone (MEK), and Dimethyl formamide (DMF)

SECTION 10: STABILITY AND REACTIVITY

10.1 Stability:

The product is stable under normal handling and storage conditions.

10.2 Hazardous reactions:

Hazardous polymerization does not occur.

10.3 Materials to avoid:

None under normal conditions of use.

Avoid contact with acids, alkalies and strong oxidizing agents.

10.4 Conditions / hazards to avoid:

Avoid flames, welding arcs, potential ignition sources, or other high temperature sources (>250 C) which induce thermal decomposition. During thermal decomposition caused by fire or overheating during improper processing combustible irritating vapours are formed consisting mainly of methyl methacrylate, which affect the eyes and respiratory system.

10.5 Hazardous / thermal decomposition products:

Carbon monoxide (CO) - is highly toxic if inhaled, present in combustion fumess of all organic materials;

Carbon dioxide (CO₂) - in sufficient concentrations can act as an asphyxiant, present
In combustion fumess of all organic materials

Acrylic monomers - can cause irritation of skin, eyes, nose, throat, and lungs

SECTION 11: TOXICOLOGICAL INFORMATION

Data for Polymethyl methacrylate copolymers:

11.1 Acute toxicity:

Practically nontoxic. Oral LD50 (rat) = 8,000 mg/kg (similar material).

11.2 Genotoxicity:

No genetic changes were observed in laboratory tests.

11.3 Other information:

Biocompatibility testing for this polymer or its extracts has generally shown that the material is inert.

11.4 Skin contact:

Irritant but not a sensitizer (mechanical irritation).

SECTION 12: ECOLOGICAL INFORMATION

Water: Not generally hazardous to water.

General: Not expected to present any significant ecological problems.

SECTION 13: DISPOSAL CONSIDERATIONS:

13.1 Recycle and discharge:

The product is suitable for mechanical recycling. After appropriate treatment it can be remelted and processed into new molded articles. Mechanical recycling is possible if the material has been selectively retrieved and carefully segregated according to type.

May be discharged or incinerated together with household refuse if local official regulations are observed.

13.2 Waste disposal:

Sweep or gather up material and place in proper container for disposal or recovery.

SECTION 14: TRANSPORT INFORMATION

14.1 Department of Transportation (DOT) Hazard Class: not regulated

14.2 Other information: Not Dangerous Cargo.

GGV See/IMDG: Code not applicable

UN No: Code not applicable

ICAD/IATA-DGr: Code not applicable

GGVE/GGVS: Code not applicable

RID/ADR: Code not applicable

ADNR: Code not applicable

SECTION 15: REGULATORY INFORMATION

OPTIX Extruded Polymethyl Methacrylate (PMMA) Solid Sheets do not require labeling as specified in EEC Directive 79/831/EEC and amendments.

OSHA Hazard Communication: Non-hazardous

Toxic Substances Control Act: Listed

CERCLA Hazardous Substances (40 CFR 302): None

SARA Section 311/312: Non-hazardous

Canadian WHMIS: None

STATE REGULATORY INFORMATION:

We have not analyzed the products covered by this MSDS, nor the raw materials used in their manufacture, for the presence of items on various state hazardous substances lists. However, to the best of our knowledge, no such substances are present at reportable concentrations, except as specifically listed below:

Methyl methacrylate (CAS 80-62-6) < 1.0%

SECTION 16: OTHER INFORMATION

OPTIX is a registered trademark of PLASKOLITE

Additional information on this product may be obtained by calling your PLASKOLITE Sales or Customer Service contact.

MSDS Prepared By: R&D Department Plaskolite

MSDS Original Date of Preparation: Juny 30, 2019

MSDS Revision Date: February 10, 2025

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use are beyond our control. We recommend that the prospective user determines the suitability of our materials and suggestions before adopting them on a commercial scale.

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