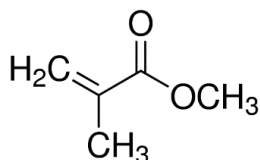




## Methyl Methacrylate (MMA) methacrylic acid, methyl ester



### Introduction

Methyl methacrylate (MMA) is a clear, colorless liquid with a slight acrylic or fruity odor. It's comprised of a polymerizable methacrylate functional group on one end and a reactive ester group on the other end. It is slightly miscible with water, soluble in most organic solvents and has relatively low volatility. Its vapor is heavier than air. It copolymerizes readily with a wide variety of monomers. The added ester group imparts properties such as durability, strength, transparency and an elevated T<sub>g</sub>.

### Applications

Methyl methacrylate can be homopolymerized into polymethyl methacrylate (PMMA), and extruded or cast into a variety of products. These products exhibit transparency, high impact strength and UV stability.

Methyl methacrylate copolymerizes readily with a wide variety of monomers. The resulting polymer chains bear pendent ester groups that impart the following important properties to the polymer products.

- Impact strength
- Weather resistance
- Crosslinking sites, ester group reacts readily with isocyanate, anhydrides and epoxy resins
- Corrosion, fogging, and abrasion resistance, as well as contribute to low odor, color, and volatility.
- Methyl methacrylate monomer is also used in the manufacture of paints, coatings, adhesives and binders, packaging materials, inks and concrete additives as well as finding use in variety of medical applications.

### Physical Properties

Property	Value
Formula weight	100.1
Appearance	Clear colorless liquid
Odor	Pungent, sweet
Specific gravity at 20 °C	0.944
Refractive index at 25 °C	1.415
Viscosity, cps at 20 °C	0.56
Boiling point at 760 mmHg	100 °C
Freezing point	-48 °C
Solubility in water	Slightly Soluble
T <sub>g</sub> of homopolymer	105 °C

## Typical Composition

Property	Typical Value
MMA assay	99.8 wt% min
MeHQ or AO-30	10 – 100 ppm
Acidity (as MAA)	0.005 wt% max
Water	0.05 wt% max
Color (APHA)	10

## Handling Precautions

Before using this product, consult the Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage. In addition to the information found on Dow's SDS, more information on handling methacrylic monomers can be found in the MPA Methacrylic Acid Safe Handling Guide and the MPA Methacrylic Esters Safe Handling Guide.

## Storage

Consult the Safety Data Sheet (SDS). The monomer shelf life informs how long the material will remain stable under normal conditions. Never store expired material.

## Health and Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area. For further information, please see our website, [dow.com](http://dow.com) or consult your local Dow representative.

## Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

## Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

## Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

### Contact:

North America: 1-800-447-4369  
Latin America: (+55)-11-5188-9000  
Europe: (+800)-3-694-6367  
Asia-Pacific: (+800)-7776-7776  
<http://www.dow.com>

Notice: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

