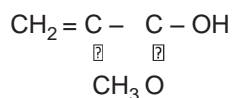


# Methacrylic acid, glacial

Unsaturated monocarboxylic acid, for manufacturing polymers and for use as a feedstock for syntheses



CAS No.: 79-41-4  
EINECS No.: 201-204-4

C<sub>4</sub>H<sub>6</sub>O<sub>2</sub>

Molar mass: 86

## Product specification

Assay (Gas chromatography)	min. 99.5 %
Water content (ASTM E 203)	max. 0.1 %
Color on despatch (APHA, ASTM D 1209)	max. 20
Standard stabilization (HPLC BASF or ASTM D 3125)	200 □ 20 ppm MEHQ

The aforementioned data shall constitute the agreed contractual quality of the product at the time of passing of risk. The data are controlled at regular intervals as part of our quality assurance program. Neither these data nor the properties of product specimens shall imply any legally binding guarantee of certain properties or of fitness for a specific purpose and no liability of ours can be derived therefrom.

## Other properties

Appearance	clear, colorless
Physical form	liquid at > 16 °C
Odor	pungent
Density at 25 °C	1.02 g/cm <sup>3</sup>
Refractive index n <sub>d</sub> at 20 °C	1.426 – 1.430
Boiling point	approx. 161 °C
Freezing point	approx. 16 °C
Viscosity	
at 20 °C	1.5 mPa · s
at 40 °C	1.0 mPa · s
Specific heat of liquid at 20 °C	2.00 kJ/kg °C
Heat of evaporation at boiling point	385 kJ/kg
Heat of polymerization	768 kJ/kg
Vapor pressure	
at 20 °C	0.89 mbar
at 40 °C	3.75 mbar
Temperature rating for electrical equipment	T 2 (300–450 °C)

**Labelling according to local Directives**  
see MSDS

**Applications**

Methacrylic acid can be used to produce homopolymers and copolymers. It can be incorporated in copolymers in order to lower the softening point and reduce the hardness. It also improves the adhesion of polymers used in paints and adhesives. Methacrylic acid is a carboxylic acid which can be used to produce methacrylic esters, methacrylamide, N-substituted methacrylamides and methacryloyl chloride by common methods.

Polymers which contain methacrylic acid can be used in many different applications, such as paints and varnishes, and leather textile auxiliaries. They can also be used as flocculants, ion exchangers and as polyelectrolytes for soil conditioning.

**Processing**

Methacrylic acid polymerizes very readily. It is therefore generally stabilized by using air as blanket gas and by addition of 200 ppm of hydroquinone monomethyl ether (MEHQ). It is only ever supplied in its stabilized form, because it can polymerize with violence if it is not stabilized. It is not usually necessary to remove the stabilizer because its action can be compensated for by adding an excess of initiator.

**Storage & Handling**

In order to prevent polymerization methacrylic acid must always be stored under air, and never under inert gases. The presence of oxygen is required for the stabilizer to function effectively. Methacrylic acid must be stored between 18 and 25 °C, preferably between 20 and 25 °C. For extended storage periods over 4 weeks it is advisable to replenish the dissolved oxygen content. Under these conditions, a storage stability of one year can be expected. In order to minimize the likelihood of overstorage, the storing procedure should strictly follow the "first-in-first-out" principle.

To prevent freezing, the temperature of methacrylic acid should never drop below 18 °C. Improper thawing can result in violent polymerization. Do not attempt to thaw frozen or partially frozen methacrylic acid unless you have received prior approval from your supplier.

It is highly recommended that an emergency restabilization system is installed. This would help to prevent polymerization of the material in a situation of pool fire or other unforeseeable events although it is no substitute for appropriate preventive measures. For more detailed information please consult also the brochure "Methacrylic Acid Safe Handling Manual" of the Methacrylates Sector Group of CEFIC. For a brochure or for more information please consult BASF.

**Safety**

A Material Safety Data Sheet has been compiled for methacrylic acid that contains up-to-date information on all questions relevant to safety.

**Note**

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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