



Methyl Methacrylate Monomer
Product Data Sheet

METHYL METHACRYLITE (MMA)
Monomer Technical Service Note

Name of Product:	Methyl Methacrylate
Chemical Formula:	CH²:C(CH³).CO.OCH³
Alternative Name:	2-propenic acid, 2 –methyl- , methyl ester
UN Number:	1247
CAS Number:	80-26-6

Physical Properties

Molecular weight	100.1
Boiling Point	100.5°C at 1013 mbar (760 mm HG)
Freezing point	-48%
Density (kg/m ³)	949 @ 15.5°C
Refractive Index (n ² d)	1.414
Vapour Pressure	37 mbar@ 20°C 244 mbar@ 60°C
Vapour Density (Air = 1)	3.46
Flash Point	10°C Closed up
Viscosity (mPa/s) @ 20°C	0.58 – 0.68
Specific Heat (kJ/kg/°C)	2.02
Thermal Conductivity (W/m ² /°C)	0.1488
Surface Tension (N/m)	4.42 x 10 ⁻²
Auto Ignition Temperature	421°C
Solubility @ 20°C	Miscible with most organic solvents. Solubility of Monomer in water: 1.6% Solubility of water in Monomer: 1.15%
Heat of polymerization (kJ/mol)	57.7
Tg of homopolymer	105°C

Further physical properties data are available on request.
Please refer to MSDS for Safety, Health and Environment information.

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Product Purity

	Units	Specification a)	Typical Analysis b)
Appearance	---	CLFFVFM c)	CLFFVFM d)
Colour	Hazen	5 max	<5
Purity	%w/w	99.90 min	99.97
Water	Ppm w/w	500 max	17
Acidity (as methacrylate acid)	Ppm w/w	35 max	11

- a) At time of issue
 b) On manufacture
 c) CLFFVFM = Clear liquid free from visible foreign matter.

Stability and Matter

Methyl Methacrylate , if unstabilised , will polymerise rapidly under the influence of heat and/or light. To prevent premature polymerization of the monomer during storage and transport , a small amount of radical scavenger is added as stabilizer. The effectiveness of the phenolic stabilizers used is dependent on the presence of the oxygen in the monomer. For this reason **it is essential that the monomer is stored in contact with air and not under an inert atmosphere.**

The standard stabilizers are hydroquinone (HQ), methyl ether of hydroquinone (MEHQ) and 2, 4 –dimethyl-6-tertiary butyl phenol ('Taponal' A or TA) . Lucite International can advise on the most appropriate stabilizer system.

Provided proper storage and handling procedures are followed (see material safety data sheet and the brochure "Storage and Handling of Methacrylate Ester Monomers" – TS/AG/2414) the product may be stored for up to 6 months from date of receipt. Product stabilized with less than 25 ppm Taponal A should be used within 3 months.

Application benefits of MMA

Methyl methacrylate can be polymerized with a wide range of co-monomers in bulk, suspension, solution, emulsion, and other processes to improve polymer properties such as hardness, gloss, and weatherability. Methacrylate based (co) polymers retain their properties better than many other polymer systems. Further information, data and advice is available on request.

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*This note does not constitute a formal specification although the specification parameters and typical analysis are correct at the time of issue of this note. Users should refer to the relevant product specification (S//MM.....) for the up to date specification including details of test methods and other information. **The information contained in this note is believed to be accurate but Lucite International accepts no liability for any loss, claim or damage resulting from any use there after***

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