

Safety data for methyl methacrylate

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from the [HSci](#) project

[Glossary](#) of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

General

Synonyms: 2-methylmethacrylate, 2-(methoxycarbonyl)propene, 2-methyl acrylic acid methyl ester, diakon, methyl methacrylate monomer, methyl alpha-methacrylate, methyl 2-methyl-2-propenoate, MME, NCI-C50680, methacrylic acid methyl ester, diakon, 2-methyl-2-propenoic acid methyl ester, Acryester M, Light ester M, Pegalan, TEB 3K

Use: acrylic bone cements, acrylic polymers, fillers, adhesives and many other uses

Molecular formula: $\text{CH}_2=\text{C}(\text{CH}_3)\text{COOCH}_3$

CAS No: 80-62-6

EINECS No: 201-297-1

Annex I Index No: 607-035-00-6

Physical data

Appearance: colourless liquid

Melting point: -48 C

Boiling point: 100 C

Vapour density: 3.45 (air = 1)

Vapour pressure: 29 mm Hg at 20 C

Density (g cm^{-3}): 0.936

Flash point: 10 C (closed cup)

Explosion limits: 2.1 - 12.5%

Autoignition temperature: 435 C
Water solubility: moderate

Stability

Prone to autopolymerisation, especially in light; typically inhibited with ca. 10 ppm hydroquinone monomethyl ether or 25 ppm [hydroquinone](#). Incompatible with strong oxidizing agents, peroxides, bases, acids, reducing agents, amines, halogens, nitric acid, nitrates, polymerization catalysts. Light sensitive. Highly flammable. May react violently with polymerization initiators.

Toxicology

Respiratory and skin irritant. Lachrymator. May act as a sensitizer by skin contact. Typical exposure limits in the range 25 to 50 ppm.

Toxicity data

(The meaning of any toxicological abbreviations which appear in this section is given [here](#).)

ORL-RAT LD50 7872 mg kg⁻¹
IHL-RAT LC50 3750 ppm
IPR-RAT LD50 1328 mg kg⁻¹
SCU-RAT LD50 7500 mg kg⁻¹
IPR-GPG LD50 2000 mg kg⁻¹
ORL-MUS LD50 5204 mg kg⁻¹
IHL-HMN TCLO 125 ppm

Risk phrases

(The meaning of any risk phrases which appear in this section is given [here](#).)

R11 R37 R38 R43.

Transport information

(The meaning of any UN hazard codes which appear in this section is given [here](#).)

UN No 1247. Hazard class 3. Packing group II.

Personal protection

Safety glasses, good ventilation. Keep off skin.

Safety phrases

(The meaning of any safety phrases which appear in this section is given [here.](#))

S24 S37 S46.

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Specifications for Methyl methacrylate (MMA)

Molecular Formula C₅H₈O₂

Mol Wt 100.11

CAS # [80-62-6]

Description Clear colourless liquid

Purity (%) 99.6 min

Sp gravity @ 20/20 deg cel 0.942 – 0.946

KF water (%) 0.05 max

HQ inhibitor in ppm 35 max

Uses:

Polymer In mfr of moulding and extrusion resins

In mfr of leather finish resins

As PVC modifier

Health Care In dental prosthesis

Coating As film enhancer and water proofing agent in paints, enamels and lacquers

Adhesives In mfr of adhesives

Lubrication As additive in lubricating oils

Textile In textile auxiliaries and sizing materials