

SAFETY DATA SHEET

Version 5.10
Revision Date 09/29/2015
Print Date 10/29/2015

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Methyl methacrylate

Product Number : W400201
Brand : Aldrich
Index-No. : 607-035-00-6

CAS-No. : 80-62-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 2), H225
Skin irritation (Category 2), H315
Skin sensitisation (Category 1), H317
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H402 Harmful to aquatic life.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.

P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Lachrymator.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	: C ₅ H ₈ O ₂
Molecular weight	: 100.12 g/mol
CAS-No.	: 80-62-6
EC-No.	: 201-297-1
Index-No.	: 607-035-00-6

Hazardous components

Component	Classification	Concentration
Methyl methacrylate		
	Flam. Liq. 2; Skin Irrit. 2; Skin Sens. 1; STOT SE 3; Aquatic Acute 3; H225, H315, H317, H335, H402	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Flash back possible over considerable distance. Container explosion may occur under fire conditions. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Methyl methacrylate	80-62-6	TWA	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Dermal Sensitization Upper Respiratory Tract irritation Eye irritation Pulmonary edema body weight effects 2015 Adoption Not classifiable as a human carcinogen		
		TWA	50.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Pulmonary edema body weight effects Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Sensitizer		
		STEL	100.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Pulmonary edema body weight effects Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Sensitizer		
		STEL	100 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Dermal Sensitization Upper Respiratory Tract irritation Eye irritation Pulmonary edema body weight effects 2015 Adoption Not classifiable as a human carcinogen		
		TWA	100.000000 ppm 410.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	100.000000 ppm 410.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	100 ppm 410 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	100 ppm 410 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	100 ppm 410 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 66 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|--|--------------------------------------|
| a) Appearance | Form: liquid
Colour: colourless |
| b) Odour | pungent |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: -48 °C (-54 °F) |
| f) Initial boiling point and boiling range | 100 °C (212 °F) |
| g) Flash point | 9 °C (48 °F) - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower | Upper explosion limit: 12.5 %(V) |

flammability or
explosive limits Lower explosion limit: 2.12 %(V)

- k) Vapour pressure 37 hPa (28 mmHg) at 20 °C (68 °F)
- l) Vapour density 3.46 - (Air = 1.0)
- m) Relative density 0.936 g/mL at 25 °C (77 °F)
- n) Water solubility 15.3 g/l at 20 °C (68 °F)
- o) Partition coefficient: n-
octanol/water log Pow: 1.38
- p) Auto-ignition
temperature 400 °C (752 °F) at 1,013.25 hPa (760.00 mmHg)
- q) Decomposition
temperature No data available
- r) Viscosity No data available
- s) Explosive properties No data available
- t) Oxidizing properties No data available

9.2 Other safety information

Surface tension 28 mN/m at 20 °C (68 °F)
Relative vapour density 3.46 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Polymerizes with evolution of heat. Avoid contact with incompatible materials. Unless inhibited, product can polymerize, raising temperature and pressure, possibly rupturing container. Check inhibitor content often adding to bulk liquid if needed. Do not blanket or mix with oxygen-free gas as it renders inhibitor ineffective.

Stable under recommended storage conditions.

Contains the following stabiliser(s):

Mequinol (<=30 ppm)

10.3 Possibility of hazardous reactions

Polymerises readily unless inhibited. Vapours may form explosive mixture with air.

10.4 Conditions to avoid

May polymerize on exposure to light.

Heat, flames and sparks.

10.5 Incompatible materials

Oxidizing agents, Peroxides, Amines, Bases, acids, Reducing agents, Halogens

10.6 Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 7,900 mg/kg

LC50 Inhalation - Rat - 4 h - 78,000 mg/m³

LD50 Dermal - Rabbit - male - > 5,000 mg/kg
(OECD Test Guideline 402)

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Irritating to skin. - 4 h

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

Respiratory or skin sensitisation

in vivo assay - Mouse

May cause allergic skin reaction.

(OECD Test Guideline 429)

Germ cell mutagenicity

No data available

Ames test

S. typhimurium

Result: negative

OECD Test Guideline 478

Mouse - male

Result: negative

Carcinogenicity

Carcinogenicity - Rat - male and female - Inhalation

No significant adverse effects were reported

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Methyl methacrylate)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

No data available

Developmental Toxicity - Rat - Inhalation

No significant adverse effects were reported

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

Repeated dose toxicity Rat - male - Oral - NOAEL : \geq 124.1 mg/kg

RTECS: OZ5075000

Central nervous system depression, Drowsiness, Irritability, Dizziness, Ataxia., narcosis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	static test LC50 - <i>Lepomis macrochirus</i> (Bluegill) - 283 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	flow-through test EC50 - <i>Daphnia magna</i> (Water flea) - 69 mg/l - 48 h
Toxicity to algae	static test EC50 - <i>Pseudokirchneriella subcapitata</i> - > 110 mg/l - 72 h (OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 14 d Result: 94 % - Readily biodegradable (OECD Test Guideline 301C)
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12.3 Bioaccumulative potential

12.4 Mobility in soil

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1247 Class: 3 Packing group: II
Proper shipping name: Methyl methacrylate monomer, stabilized
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1247 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: METHYL METHACRYLATE MONOMER, STABILIZED

IATA

UN number: 1247 Class: 3 Packing group: II
Proper shipping name: Methyl methacrylate monomer, stabilized

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:
CAS-No. Revision Date

Methyl methacrylate 80-62-6 2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methyl methacrylate	80-62-6	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methyl methacrylate	80-62-6	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methyl methacrylate	80-62-6	2007-07-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H402	Harmful to aquatic life.
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.10

Revision Date: 09/29/2015

Print Date: 10/29/2015