

Material Safety Data Sheet

Version 4.2

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Methyl methacrylate

Product Number : M55909

Brand : Aldrich

Company : Sigma-Aldrich
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USA

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2. HAZARDS IDENTIFICATION**Emergency Overview****OSHA Hazards**

Flammable liquid, Target Organ Effect, Skin sensitiser, Irritant

Target Organs

Liver, Kidney

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.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves.

HMIS Classification

Health hazard: 2

Chronic Health Hazard: *

Flammability: 3

Physical hazards: 0

NFPA Rating

Health hazard: 2

Fire: 3

Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Skin May be harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : $C_5H_8O_2$

| CAS-No. | EC-No. | Index-No. | Concentration |
|----------------------------|-----------|--------------|---------------|
| Methyl methacrylate | | | |
| 80-62-6 | 201-297-1 | 607-035-00-6 | <= 100 % |
| Mequinol | | | |
| 150-76-5 | 205-769-8 | 604-044-00-7 | <= 0.003 % |

4. 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.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Specific hazards arising from the chemical

Flash back possible over considerable distance. Container explosion may occur under fire conditions.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, 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.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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).

7. HANDLING AND STORAGE

Precautions for safe handling

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

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

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. Store in cool place.

Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

| Components | CAS-No. | Value | Control parameters | Update | Basis |
|---------------------|---|-------|----------------------|------------|--|
| Methyl methacrylate | 80-62-6 | TWA | 50 ppm | 2007-01-01 | USA. ACGIH Threshold Limit Values (TLV) |
| Remarks | Upper Respiratory Tract irritation Eye irritation Pulmonary edema body weight effects Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories. Sensitizer | | | | |
| | | STEL | 100 ppm | 2007-01-01 | USA. ACGIH Threshold Limit Values (TLV) |
| | Upper Respiratory Tract irritation Eye irritation Pulmonary edema body weight effects Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories. Sensitizer | | | | |
| | | TWA | 100 ppm 410 mg/m3 | 1989-01-19 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | | TWA | 100 ppm 410 mg/m3 | 1997-08-04 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | The value in mg/m3 is approximate. | | | | |

Personal protective equipment

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).

Hand 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.

Eye 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 and 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.

Hygiene measures

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

| | |
|--------|------------|
| Form | liquid |
| Colour | colourless |

Safety data

| | |
|---|--|
| pH | no data available |
| Melting point | -48 °C (-54 °F) - lit. |
| Boiling point | 100 °C (212 °F) - lit. |
| Flash point | 9 °C (48 °F) - closed cup |
| Ignition temperature | 435 °C (815 °F) |
| Lower explosion limit | 2.12 %(V) |
| Upper explosion limit | 12.5 %(V) |
| Vapour pressure | 51.3 hPa (38.5 mmHg) at 25 °C (77 °F) |
| Density | 0.936 g/cm ³ at 25 °C (77 °F) |
| Water solubility | 15 g/l |
| Partition coefficient: n-octanol/water | log Pow: 1.38 |
| Relative vapour density | 3.46 - (Air = 1.0) |

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat. May polymerize on exposure to light.

Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

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

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Contains the following stabiliser(s):

Mequinol (<=0.003 %)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 7,872 mg/kg

Remarks: Behavioral:Muscle weakness. Behavioral:Coma. Respiratory disorder

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

LD50 Dermal - rabbit - > 5,000 mg/kg

Remarks: Prolonged skin contact may cause skin irritation and/or dermatitis.

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

May cause allergic skin reaction.

Germ cell mutagenicity

no data available

Carcinogenicity

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: | No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| ACGIH: | No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |
| 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

Specific target organ toxicity - single exposure (GHS)

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (GHS)

no data available

Aspiration hazard

no data available

Potential health effects

| | |
|-------------------|--|
| Inhalation | May be harmful if inhaled. Causes respiratory tract irritation. |
| Ingestion | May be harmful if swallowed. |
| Skin | May be harmful if absorbed through skin. Causes skin irritation. |
| Eyes | Causes eye irritation. |

Signs and Symptoms of Exposure

Central nervous system depression, Drowsiness, Irritability, Dizziness, Ataxia., narcosis

Additional Information

RTECS: OZ5075000

12. ECOLOGICAL INFORMATION

Toxicity

| | |
|--|---|
| Toxicity to fish | LC50 - Pimephales promelas (fathead minnow) - 125.5 - 275.0 mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates. | EC50 - Daphnia magna (Water flea) - 720 mg/l |
| Toxicity to algae | EC50 - Pseudokirchneriella subcapitata (green algae) - 170 mg/l - 96 h |

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

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
Marine pollutant: No
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
Marine pollutant: No

IATA

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

15. REGULATORY INFORMATION

OSHA Hazards

Flammable liquid, Target Organ Effect, Skin sensitiser, Irritant

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

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

SARA 313 Components

| | 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**Further information**

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.