SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

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 Inc.
3050 SPRUCE ST
ST. LOUIS MO  63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 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 sensitization (Category 1), H317
- Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
- Short-term (acute) aquatic hazard (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
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada

Pictogram

Signal Word

Hazard statement(s)
H225 Highly flammable liquid and vapor.
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/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must 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/ doctor 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.

SECTION 3: Composition/information on ingredients

3.1 Substances
Formula : C₅H₈O₂
Molecular weight : 100.12 g/mol
CAS-No. : 80-62-6
EC-No. : 201-297-1
Index-No. : 607-035-00-6

Aldrich - W400201

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<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>methyl methacrylate</td>
<td>Flam. Liq. 2; Skin Irrit. 2; Skin Sens. 1B; STOT SE 3; Aquatic Acute 3; H225, H315, H317, H335, H402</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: immediately make victim drink water (two glasses at most). 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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2) Foam Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Combustible.
Pay attention to flashback.
Vapors are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.
5.3 **Advice for firefighters**  
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 **Further information**  
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures**

6.1 **Personal precautions, protective equipment and emergency procedures**  
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 **Environmental precautions**  
Do not let product enter drains. Risk of explosion.

6.3 **Methods and materials for containment and cleaning up**  
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 **Reference to other sections**  
For disposal see section 13.

---

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**  
**Advice on protection against fire and explosion**  
Flash back possible over considerable distance. Container explosion may occur under fire conditions. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

**Hygiene measures**  
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**  
**Storage conditions**  
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

**Storage class**  
Storage class (TRGS 510): 3: Flammable liquids

7.3 **Specific end use(s)**  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Ingredients with workplace control parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
</tr>
<tr>
<td>methyl methacrylate</td>
</tr>
<tr>
<td>CAS-No. 80-62-6</td>
</tr>
<tr>
<td>Value TWA</td>
</tr>
<tr>
<td>50 ppm</td>
</tr>
<tr>
<td>Control parameters Basis</td>
</tr>
<tr>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
</tr>
<tr>
<td>Dermal Sensitization</td>
</tr>
<tr>
<td>Not classifiable as a human carcinogen</td>
</tr>
<tr>
<td>STEL TWA</td>
</tr>
<tr>
<td>100 ppm</td>
</tr>
<tr>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Dermal Sensitization</td>
</tr>
<tr>
<td>Not classifiable as a human carcinogen</td>
</tr>
<tr>
<td>TWA</td>
</tr>
<tr>
<td>100 ppm 410 mg/m3</td>
</tr>
<tr>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>TWA</td>
</tr>
<tr>
<td>100 ppm 410 mg/m3</td>
</tr>
<tr>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td>PEL</td>
</tr>
<tr>
<td>50 ppm 205 mg/m3</td>
</tr>
<tr>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td>STEL</td>
</tr>
<tr>
<td>100 ppm 410 mg/m3</td>
</tr>
<tr>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses Tightly fitting safety goggles

Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact
Material: butyl-rubber
Minimum layer thickness: 0.7 mm
Break through time: 60 min
Material tested:Butoject® (KCL 898)
**Body Protection**
Flame retardant antistatic protective clothing.

**Respiratory protection**
Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.
required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains. Risk of explosion.

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### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Form: liquid</td>
</tr>
<tr>
<td></td>
<td>Color: colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>pungent</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Melting point/range: -48 °C (-54 °F)</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>100 °C 212 °F</td>
</tr>
<tr>
<td>Flash point</td>
<td>10 °C (50 °F) - closed cup - DIN 51755 Part 1</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Upper explosion limit: 12.5 %(V)</td>
</tr>
<tr>
<td></td>
<td>Lower explosion limit: 2.1 %(V)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>37 hPa at 20 °C (68 °F) - OECD Test Guideline 104</td>
</tr>
<tr>
<td>Vapor density</td>
<td>ca.3.5 at 20 °C(68 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>0.936 g/mL at 25 °C (77 °F)</td>
</tr>
<tr>
<td></td>
<td>Relative density 0.9420 °C</td>
</tr>
<tr>
<td>Water solubility</td>
<td>15.3 g/l at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 1.38 at 20 °C (68 °F) - OECD Test Guideline 107 - Bioaccumulation is not expected.</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>435 °C (815 °F) at 1,013.25 hPa</td>
</tr>
</tbody>
</table>
9.2 Other safety information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Decomposition temp.</td>
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<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>none</td>
</tr>
</tbody>
</table>

Surface tension: 61 mN/m - OECD Test Guideline 115
Relative vapor density: ca.3.5 at 20 °C (68 °F)

SECTION 10: Stability and reactivity

10.1 Reactivity
Vapors may form explosive mixture with air.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).
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.

10.3 Possibility of hazardous reactions
Polymerizes readily unless inhibited.

10.4 Conditions to avoid
May polymerize on exposure to light.
Warming.

10.5 Incompatible materials
rubber, various plastics, Strong oxidizing agents

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - > 5,000 mg/kg
(OECD Test Guideline 401)
Remarks: (External MSDS)
LC50 Inhalation - Rat - male and female - 4 h - 29.8 mg/l - vapor
Remarks: (ECHA)
LD50 Dermal - Rabbit - male - > 5,000 mg/kg
(OECD Test Guideline 402)

**Skin corrosion/irritation**
Skin - Rabbit
Result: Irritating to skin. - 4 h
Remarks: (ECHA)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: No eye irritation
Remarks: (ECHA)

**Respiratory or skin sensitization**
Local lymph node assay (LLNA) - Mouse
Result: positive
(OECD Test Guideline 429)

**Germ cell mutagenicity**
Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test Type: Micronucleus test
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative

Test Type: dominant lethal test
Species: Mouse
Application Route: Inhalation
Method: OECD Test Guideline 478
Result: negative

**Carcinogenicity**
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient 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 on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
Inhalation - May cause respiratory irritation. Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

### 11.2 Additional Information

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

**SECTION 12: Ecological information**

#### 12.1 Toxicity

**Toxicity to fish**
flow-through test LC50 - Lepomis macrochirus (Bluegill sunfish) - 191 mg/l - 96 h
Remarks: (ECHA)
static test LC50 - Lepomis macrochirus (Bluegill sunfish) - 283 mg/l - 96 h
Remarks: (ECHA)

**Toxicity to daphnia and other aquatic invertebrates**
flow-through test NOEC - Daphnia magna (Water flea) - 48 mg/l - 48 h
Remarks: (ECHA)
flow-through test EC50 - Daphnia magna (Water flea) - 69 mg/l - 48 h
Remarks: (ECHA)

**Toxicity to algae**
static test ErC50 - Pseudokirchneriella subcapitata - > 110 mg/l - 72 h
(OECD Test Guideline 201)
static test NOEC - Pseudokirchneriella subcapitata - > 110 mg/l - 72 h
(OECD Test Guideline 201)

**Toxicity to fish (Chronic toxicity)**
NOEC - Danio rerio (zebra fish) - 9.4 mg/l - 35 d
(OECD Test Guideline 210)

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**
NOEC - Daphnia magna (Water flea) - 37 mg/l - 21 d
(OECD Test Guideline 211)
12.2 Persistence and degradability
Biodegradability aerobic - Exposure time 14 d
Result: 94 % - Readily biodegradable.
(OECD Test Guideline 301C)

Biochemical Oxygen Demand (BOD) 140 mg/g

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 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

SECTION 15: Regulatory information
SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-62-6</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

methyl methacrylate

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>CAS-No.</th>
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<tbody>
<tr>
<td>80-62-6</td>
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</tbody>
</table>

methyl methacrylate

Pennsylvania Right To Know Components

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</thead>
<tbody>
<tr>
<td>80-62-6</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

methyl methacrylate

SECTION 16: Other information

Further information
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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packaging slip for additional terms and conditions of sale.