1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

- **Product name**: Methyl methacrylate
- **Product Number**: M55909
- **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/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.

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

Hazardous components

<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. 1; 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.

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

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. 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.
Recommended storage temperature 2 - 8 °C
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
<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
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<tr>
<td>Methyl methacrylate</td>
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<td>USA. ACGIH Threshold Limit Values (TLV)</td>
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<tr>
<td>Remarks</td>
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<td>Eye irritation</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pulmonary edema</td>
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<tr>
<td>TWA</td>
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<td>USA. ACGIH Threshold Limit Values (TLV)</td>
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<tr>
<td></td>
<td></td>
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<td>body weight effects</td>
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<td>Adopted values or notations enclosed are those for which changes are proposed in the NIC</td>
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<td>See Notice of Intended Changes (NIC)</td>
</tr>
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</tr>
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<td>USA. ACGIH Threshold Limit Values (TLV)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Respiratory Tract irritation</td>
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</tr>
<tr>
<td>TWA</td>
<td></td>
<td>100.000000 ppm</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
<td>The value in mg/m3 is approximate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>410.000000 mg/m3</td>
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<tr>
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<td>100 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>410 mg/m3</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>100 ppm</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>410 mg/m3</td>
</tr>
<tr>
<td>The value in mg/m3 is approximate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Aldrich - M55909
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

<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>Colour: colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>Pungent</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing</td>
<td>Melting point/range: -48 °C (-54 °F) - lit.</td>
</tr>
</tbody>
</table>

USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

<table>
<thead>
<tr>
<th></th>
<th>TWA</th>
<th>PEL</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ppm</td>
<td>100</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>mg/m³</td>
<td>410</td>
<td>205</td>
<td>410</td>
</tr>
</tbody>
</table>

California permissible exposure limits for chemical contaminants (Title 8, Article 107)
f) Initial boiling point and boiling range  100 °C (212 °F) - lit.
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 flammability or explosive limits
   Upper explosion limit: 12.5 % (V)
   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/cm³ 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 (=<0.003 %)
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. Heat Extremes of temperature and direct sunlight.
   Heat, flames and sparks.
10.5 Incompatible materials
   Oxidizing agents, Peroxides, Amines, Bases, acids, Reducing agents, Halogens
10.6 Hazardous decomposition products
   Hazardous decomposition products formed under fire conditions. - Carbon oxides
   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:
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.

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
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
Stomach - Irregularities - Based on Human Evidence (Mequinol)

12. ECOLOGICAL INFORMATION

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

12.2 Persistence and degradability
Biodegradability aerobic - Exposure time 14 d
Result: 94 % - Readily biodegradable

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:

<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>

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

Massachusetts Right To Know Components

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

Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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<tr>
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<tr>
<td>Methyl methacrylate</td>
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</tbody>
</table>

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