

# SPI Supplies Division

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Manufacturer's CAGE: 1P573

# Safety Data Sheet

Date Effective: December 8, 2014

02807-AA, 02807-AB

**SPI-Chem™ Methyl Methacrylate**

## Section 1: Identification

Chemical Name/Synonyms..... Methyl methacrylate monomer; Methyl methylacrylate; Methyl 2-methyl-2-propenoate; 2-Methyl-2propenoic acid methyl ester; Methyl alpha-methacrylate

Chemical family..... ester

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-527-3887

Worldwide FAX: 1-(703)-741-6090

Toll-free phone: 1-(800)-424-9300 USA only

Product or Trade Name..... Methyl methacrylate

CAS #'s..... 80-62-6

Chemical Formula.....  $\text{CH}_2\text{C}(\text{CH}_3)\text{COOCH}_3$

### GHS Classification

Flammable liquids: Category 2

Skin irritation: Category 2

Skin sensitization: Category 1

Specific target organ toxicity – single exposure: Category 3

### GHS Label elements:

Pictogram



Signal word: Danger

Hazard statements:

H225: Highly flammable liquid and vapor

H315: Causes skin irritation

H317: May cause an allergic skin reaction

H335: May cause respiratory irritation

Precautionary statements:

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

P233: Keep container tightly closed.  
 P235: Keep container cool.  
 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 should not be allowed out of the workplace.  
 P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.  
 P303+P361+P353: IF ON SKIN: Remove/take off immediately all contaminated clothing.  
     Rinse skin with water/ shower.  
 P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable  
     for breathing.  
 P312: Call a POISON CENTER or doctor/ physician if you feel unwell.  
 P403: Store in a well-ventilated area.

Hazardous Material Information System USA

Health..... 2  
 Fire Hazard..... 3  
 Reactivity..... 0  
 Personal Protection.....

NFPA Rating (estimated)

Health..... 2  
 Flammability..... 3  
 Reactivity..... 0

## Section 2: Composition

Component Name	CAS #	Percent	EINECS/ELINCS
Methyl methacrylate	80-62-6	>99%	201-297-1

## Section 3: Hazard Identification

**Emergency overview:**

**Warning!**

Flammable. Irritant. Sensitizer. Lachrymator. Irritating to eyes, respiratory system, and skin. This material may be susceptible to autooxidation. This material may be peroxidizable, which may cause hazardous polymerization.

**Appearance:** Colorless liquid

**Flash Point:** 48.2°F (Closed Cup)

**Target Organs:** eyes, skin, nervous system, respiratory system, liver, kidneys.

**Potential Health Effects**

**Eye:** Causes eye irritation. Lachrymator.

**Skin:** Causes irritation. May cause sensitization. May be absorbed through the skin.

**Ingestion:** Harmful if swallowed. May cause gastrointestinal irritation accompanied with nausea, diarrhea, and vomiting. May cause central nervous system depression, liver damage and kidney damage.

**Inhalation:** Causes respiratory tract irritation. Symptoms of overexposure may include coughing, chest pain, central nervous system depression, nausea, headache, drowsiness, irritability and narcosis. High levels may cause pulmonary edema and difficulty breathing.

**Chronic:** Prolonged inhalation may cause respiratory tract inflammation and lung damage. Repeated exposure may cause tingling or prickling sensation of the skin.

**Aggravation of Pre-existing Conditions:** Persons with impaired liver, kidney, respiratory function, or with pre-existing skin or eye disorders may be more susceptible to the effects of this substance.

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## Section 4: First Aid Measures

### Eyes:

In case of eye contact, immediately flush eyes with copious amounts of water for at least 15 minutes, lifting upper and lower eyelids open. Seek medical attention.

### Skin:

In case of skin contact, flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and wash before reuse. Remove contaminated shoes and thoroughly clean before reuse. Seek medical attention if symptoms occur.

### Ingestion:

If swallowed, wash out mouth with water, provided person is conscious. **Seek immediate medical attention.** Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

### Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

### Notes to Physician:

Treat symptomatically and supportively. After vomiting, have victim drink a mixture of 2 tablespoonfuls of activated charcoal and 8 ounces of water.

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## Section 5: Fire Fighting Measures

**Flash Point:** 48.2°F (9°C) (closed cup)

**Autoignition Temperature:** 435°C

### Explosion Limits:

Upper: 12.5%

Lower: 2.1%

**NFPA Rating:** (estimated) Health: 2; Flammability: 3; Instability: 0

### General Information:

Flammable liquid and vapor. Fire or excessive heat may result in violent rupture of the container due to bulk polymerization. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors may collect in low or confined areas. This liquid floats on water and may travel to a source of ignition.

As in any fire, wear full protective clothing including a NIOSH/MSHA approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

### Extinguishing Media:

Dry chemical, alcohol foam or carbon dioxide. Water may be ineffective. Material floats on water and may travel

back to ignition source and spread the fire. Water may be used to flush spills away from exposures and to dilute spills to non-flammable mixtures. Water spray may be used to keep fire exposed containers cool.

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## Section 6: Accidental Release Measures

### General Information:

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate protective equipment as indicated in section 8.

### Spills/Leaks:

Contain and recover liquid if possible. Absorb spill with inert material such as vermiculite, sand or earth. Scoop up with nonsparking tool and place in suitable container for disposal. Avoid runoff into storm sewers and ditches which lead to waterways. Wash spill site after pickup is complete.

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## Section 7: Handling and Storage

### Handling:

Avoid breathing vapor. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

### Storage:

Keep away from sources of ignition. Store refrigerated, below 4°C/39°F. Keep container tightly closed. Keep from contact with oxidizing materials. May form peroxides, which may initiate exothermic polymerization. An air space is required above the liquid in all containers; avoid storage under an oxygen-free atmosphere.

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## Section 8: Exposure Controls and Personal Protection

### Engineering Controls:

A safety shower and eyewash facility must be readily available. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use nonsparking tools. Use only in a chemical fume hood.

### Exposure Limits:

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Methyl methacrylate	50ppm TWA 100 ppm STEL	100 ppm TWA 410vmg/m <sup>3</sup> TWA 1000 ppm IDHL	100 ppm TWA 410 mg/m <sup>3</sup> TWA

### OSHA Vacated PELs:

Methyl methacrylate: 100 ppm TWA; 410 mg/m<sup>3</sup> TWA

### Personal Protective Equipment

#### Eyes:

Wear chemical splash goggles and/or a full face shield where splashing is possible.

#### Skin:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls as appropriate, to prevent skin contact.

#### Respirators:

If exposure limits are exceeded or if irritation or other symptoms are experienced, follow OSHA respirator regulations found on 29 CFR 1910.134; use a NIOSH/MSHA or European Standard En149 approved respirator.

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## Section 9: Physical and Chemical Properties

**Physical State:** liquid

**Appearance:** clear, colorless

**Odor:** sharp, irritating

**pH:** Not available

**Vapor Pressure:** 29 mm Hg at 20°C

**Vapor Density:** 3.5 (air=1)

**Evaporation Rate:** 3.1 (Butyl acetate = 1)

**Viscosity:** .06 at 20°C

**Boiling Point:** 100 °C

**Freezing/Melting Point:** -48 °C

**Autoignition Temperature:** 421 °C

**Flash Point:** 2 °C

**Decomposition Temperature:** Not available

**Explosion Limits**

**Lower:** 2.1%

**Upper:** 12.5%

**Solubility in water:** 1% to 10%

**Specific Gravity/Density:** 0.94 (water=1)

**Molecular Formula:** CH<sub>2</sub>·C(CH<sub>3</sub>)COOCH<sub>3</sub>

**Molecular Weight:** 100.12

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## Section 10: Stability and Reactivity

**Chemical Stability:**

Stable at room temperature.

**Conditions to Avoid:**

Light, ignition sources, exposure to air, excess heat, loss of inhibitor, confined spaces, contamination, ionizing radiation, oxygen-free atmospheres, oxygen depletion.

**Incompatibility with Other Materials:**

Materials generating free radicals, strong oxidizing agents, strong acids, strong bases, amines, halogens, catalytic metals, polymerization catalysts

**Hazardous Decomposition of Products:**

Carbon monoxide, Carbon dioxide, Formic acid, and Formaldehyde.

**Hazardous Polymerization:**

May occur under high temperature or in contact with strong oxidents and free radical generators.

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## Section 11: Toxicological Information

**RTECS#:**

CAS# 80-62-6: OZ5075000

**LD<sub>50</sub>/LC<sub>50</sub> Information:**

LD50: Oral, rabbit: 9400 mg/kg

Oral, rat: 7872 mg/kg

LC50: Inhalation, rat: 3750 ppm

**Carcinogenicity:**

CAS# 80-62-6 is not listed by ACGIH, NTP OR CA Prop 65.

CAS# 80-62-6 has an IARC rating as Group 3.

**Reproductive Effects:**

Has caused mutagenic and teratogenic effects on laboratory animals.

**Neurotoxicity:**

Abnormal touch sensations such as burning and prickling of the digits, with mild, local axonal degeneration, has been reported.

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## Section 12: Ecological Information

**Environmental Fate:**

When released into the soil, this material is expected to quickly evaporate. When released to water, this material is expected to quickly evaporate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. This material has an estimated bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate.

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## Section 13: Disposal Considerations

Contact a licensed professional waste disposal service to dispose of this material. Consult all federal, state and local hazardous waste regulations.

**RCRA P-Series:** none listed

**RCRA U-Series:** CAS# 680-62-6: waste number U162 (Ignitable waste, Toxic waste)

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## Section 14: Transport Information

**US DOT Hazard Class:**

Shipping Name: Methyl methacrylate monomer, stabilized

Hazard Class: 3

UN Number: UN1247

Packing Group: II

Label: Flammable Liquid

**IATA (for international shipments)**

Shipping Name: Methyl methacrylate monomer, stabilized

IATA UN Number: UN1247

Hazard Class: 3

Packing Group: II

Label: Flammable Liquid

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## Section 15: Regulatory Information

**United States:****TSCA**

CAS# 80-62-6 is listed on the TSCA inventory.

**Health & Safety Reporting List**

CAS# 80-62-6: Effective 4/13/89, Sunset 6/30/98

**Chemical Test Rules**

This chemical is not under a Chemical Test Rule.

**Section 12b:**

This chemical is not listed under TSCA Section 12b.

**TSCA Significant New Use Rule:**

This chemical does not have a SNUR under TSCA.

**CERCLA: Hazardous Substances and corresponding RQ**

CAS# 80-62-6: 1000 lb final RQ; 454 kg final RQ.

**SARA Section 302 (TPQ)**

This chemical does not have a TPQ.

**Section 313**

CAS# 80-62-6 is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**

CAS# 80-62-6 is listed as a hazardous air pollutant.

This chemical does not contain any Class 1 or Class 2 Ozone depleters.

**Clean Water Act:**

CAS# 80-62-6 is listed as a Hazardous Substance under the CWA.

This chemical is not listed as a Priority Pollutant or as a Toxic Pollutant under the CWA.

**OSHA:**

This chemical is not considered highly hazardous by OSHA.

**State (Individual states in the USA)**

CAS# 80-62-6 is listed on the following state Right to Know Lists:

California, Massachusetts, Minnesota, New Jersey, Pennsylvania

**California Prop. 65:**

**California No Significant Risk Level:**

CAS# 80-62-6 is not listed.

**European/International Regulations:**

European Labeling in Accordance with EC Directives

Hazard Symbols: XI F

Risk Phrases:

R11 Highly flammable.

R37 Irritating to respiratory system.

R 38 Irritating to skin.

R43 May cause sensitization by skin contact

Safety Phrases:

S2 Keep out of reach of children

S24 Avoid contact with skin.

S37 Wear suitable gloves.

S46 If swallowed, seek medical advice immediately and show this container or label.

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## Section 16: Other Information

**Disclaimer of Liability:**

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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