

## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME	METHYL METHACRYLATE - STABILIZED (Chemically stabilized)
Product Description	This product contains Methyl methacrylate and low levels of stabiliser.
Alternative names	Stabilised methyl methacrylate monomer; 2-propenoic acid, 2-methyl-, methyl ester; MMA; MMM.
CAS No.	80-62-6
Identified use(s)	Monomer for production of acrylic polymers and intermediate for production of methacrylate esters.
Uses advised against	Mixtures containing unreacted liquid monomer intended to come into contact with skin or nails.
Manufacturer	LUCITE INTERNATIONAL, Inc. 7275 Goodlett Farms Parkway Cordova, TN 38016-4909 Phone: 1-800-4-LUCITE msdsinfo@lucite.com
Emergency Phone No.	1-800-424-9300 (Transport Emergency) 1-877-886-2143 (Medical Emergency)

### 2. HAZARDS IDENTIFICATION

Hazard classification	Flammable liquid Category 2. Skin corrosion / irritation Category 2. Skin sensitization Category 1. STOT - single exposure Category 3 Hazardous to the aquatic environment - Acute hazard Category 3.
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#### Label elements

##### Symbol



##### Signal word Hazard statement(s)

Danger  
 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 vapors.  
P264: Wash 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/protective clothing/eye protection/face protection.  
P302+P352: IF ON SKIN: Wash with plenty of soap and water.  
P303+P361+P353: IF ON SKIN (or hair): 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.  
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 water spray, foam, dry powder or CO<sub>2</sub> for extinction.  
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 hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical identity of the substance	Methyl methacrylate .
Common name(s), synonym(s) of the substance	Stabilised methyl methacrylate monomer; 2-propenoic acid, 2-methyl-, methyl ester; MMA; MMM.
CAS No.	80-62-6
Impurities and stabilizing additives	Standard grades contain inhibitors from among the following: 8000 ppm Maximum Hydroquinone ( CAS No. 123-31-9) p-Methoxyphenol ( CAS No. 150-76-5) 2,4-Dimethyl-6-t-butylphenol ( CAS No. 1879-09-0) Octadecyl 3,5-di-tert-butyl-4-hydroxycinnamate ( CAS No. 2082-79-3) Phenothiazine ( CAS No. 92-84-2)

Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below.

Substance identity	%W/W	CAS No.
Methyl methacrylate	>99	80-62-6

### 4. FIRST AID MEASURES

#### Description of first aid measures

Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell.
Skin Contact	IF ON SKIN (or hair): Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash before re-use.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain immediate medical attention.
Ingestion	Do not induce vomiting. Rinse mouth. Obtain immediate medical attention.

#### Most important symptoms and effects, both acute and delayed

Causes skin irritation. May cause respiratory irritation. May cause an allergic skin reaction.

Indication of any immediate medical attention and special treatment needed  
None necessary.

## 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	In case of fire, use water spray, foam, dry powder or CO <sub>2</sub> for extinction. Keep containers cool by spraying with water if exposed to fire.
Unsuitable Extinguishing Media	Do not use water jet.
Special hazards arising from the substance or mixture	Highly flammable liquid and vapor. May polymerize on heating. Sealed containers may rupture explosively if hot.
Special protective equipment and precautions for fire fighters	A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Eliminate sources of ignition. Wear protective gloves and eye/face protection. Avoid breathing vapors. See Section: 8
Environmental precautions	Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.
Methods and materials for containment and cleaning up	Collect spillage. Do not adsorb onto sawdust or other combustible materials. Transfer to a container for disposal or recovery. Use only non-sparking tools.
Other advice	See Section: 8, 13

## 7. HANDLING AND STORAGE

HANDLING	Do not eat, drink or smoke at the work place. Wash thoroughly after handling. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. The vapor is heavier than air; beware of pits and confined spaces. Ground container and receiving equipment. Use explosion proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
STORAGE	Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Keep away from heat, sparks, open flame, hot surfaces - No smoking. Protect from sunlight. IMPORTANT: Methacrylates stored in bulk must be kept in contact with air (oxygen). Monomer vapors are uninhibited and may form polymers in vent or flame arresters, resulting in blockage of vents. Check inhibitor levels every 6 months and return to original level.
Storage Temperature	Store at temperatures not exceeding 77°F (25°C).
Incompatible materials:	Polymerization catalysts, such as peroxy or azo compounds, strong acids, alkalis and oxidizing agents. Oxides and salts of transition metals. Organic Nitrogen containing compounds. Cyclohexanone/Cyclohexenol tautomer.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Substance	CAS No.	OSHA PEL TWA	ACGIH TWA	ACGIH STEL	Company Std. TWA	Company Std. STEL
Methyl methacrylate	80-62-6	100 ppm 410 mg/m <sup>3</sup>	50 ppm (205 mg/m <sup>3</sup> )	100 ppm (410 mg/m <sup>3</sup> ) (SEN;A4)	50 ppm	100 ppm

Appropriate engineering controls	Do not eat, drink or smoke at the work place. Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded. Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.
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Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection



Wear eye/face protection.  
Safety spectacles/goggles/full face shield.

Skin protection



Wear protective gloves.  
For splash protection: Butyl; EN 374.  
For immersion protection: Butyl; 0.7 mm or greater; EN 374.  
Suitability of gloves should be confirmed with glove manufacturer. Change gloves, if contamination occurs or duration of activity exceeds breakthrough time. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Respiratory protection



Wear respiratory protection.  
Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. A suitable mask with filter type A may be appropriate. In the event of formation of particularly high levels of vapor a self contained breathing apparatus may be appropriate.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Liquid.
Color.	Clear/colorless.
Odour	Characteristic strong and acrid.
Odour threshold (ppm)	0.5 - 1.0
pH (Value)	Not applicable.
Melting point (°C)	-48
Boiling Point (°C)	100.5
Flash point (°C)	10 [Closed cup]
Relative Evaporation Rate (Ether = 1)	Not available.
Flammability (solid, gas)	Not applicable.
Flammable Limits (Lower) (%v/v)	2.1
Flammable Limits (Upper) (%v/v)	12.5
Vapour pressure (Pascal)	3600 at 68°F (20°C)
Vapor Density (Air=1)	3.5
Solubility (Water)	Slightly soluble. 1.6% at 68°F (20°C)
Solubility (Other)	Miscible with most organic solvents.
Partition coefficient (n-Octanol/water)	1.38
Auto Ignition Temperature (°C)	421
Decomposition temperature (°C)	Not applicable.
Viscosity (mPa. s)	Not available.
Explosive Properties	Not applicable.
Oxidising Properties	Not applicable.
Density (g/ml)	0.949 at 60°F (15.5°C)
Minimum Ignition Energy (mJ)	0.89 - 0.97 at 73.5°F (23°C)

## 10. STABILITY AND REACTIVITY

Reactivity	Will exothermically polymerise in the presence of initiators.
Chemical Stability	Stable in the presence of inhibitor.
Hazardous Reactions	Susceptible to polymerization initiated by prolonged heating or the presence of catalyst.
Conditions to avoid	Heat and direct sunlight.
Materials to avoid	Polymerization catalysts, such as peroxy or azo compounds, strong acids, alkalis and oxidizing agents. Oxides and salts of transition metals.
	Organic Nitrogen containing compounds. Cyclohexanone/Cyclohexenol tautomer.
Hazardous Decomposition Product(s)	Does not decompose up to auto-ignition temperature.

## 11. TOXICOLOGICAL INFORMATION

Acute toxicity	
Ingestion	Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.
Ingestion toxicity data	LD50 (oral) > 5000 mg/Kg
Ingestion STOT-single exposure	Not applicable.
Inhalation	May cause respiratory irritation. May cause drowsiness and dizziness.
Inhalation toxicity data	LC50 (vapor) 7093 ppm (29.8 mg/l)(4hr)
Inhalation STOT-single exposure	Exposure to high concentrations may produce adverse effects on the nasal epithelium.
Respiratory sensitization data	Not a respiratory sensitizer. Irritant to the respiratory system and high concentrations may aggravate pre-existing conditions.
Aspiration hazard data	Not an aspiration hazard.
Skin Contact	May cause an allergic skin reaction. Causes skin irritation. Repeated and/or prolonged contact may cause dermatitis.
Skin contact toxicity data	LD50 (dermal) > 5000 mg/Kg
Skin contact STOT-single exposure	Not applicable.
Skin sensitization data	Skin sensitisation has been reported in studies with guinea pigs. (OECD 406) Evidence of contact sensitization in man.
Eye Contact	High vapor concentration will cause irritation.
Eye contact toxicity data	Slight irritant to rabbit eyes. (OECD 405)
Eye STOT-single exposure	Not applicable.
Germ cell mutagenicity data	Salmonella typhimurium (TA1535, 1537, 97, 98, 100) negative (OECD 471)
Repeated exposure toxicity	
Chronic exposure	Repeated exposure to high levels produces adverse effects on the heart, lungs, liver and kidneys. Repeated exposure of animals by inhalation to levels at or above the occupational exposure level produces adverse effects on the nasal epithelium (levels of 100 and 400ppm). There is no reason to believe that methyl methacrylate represents a carcinogenic or mutagenic hazard to man based upon evidence from well conducted animal studies, relevant mutagenicity studies and adequate epidemiology studies in relevant cohorts. Recent studies in animals have shown that high exposures do not produce embryo or foetotoxic nor teratogenic effects in the presence of maternal toxicity.
STOT - repeated exposure data	NOEL (oral) (rat) (104 weeks) > 2000 ppm NOAEC (inhalation) (rat) (104 weeks) 100 ppm (OECD 453) NOAEC (inhalation) (mouse) (14 weeks) 1000 ppm (OECD 412)
Reproductive toxicity data	Teratogenic and fetotoxic effects only observed in presence of maternal toxicity. NOAEC (mouse) = 9000 ppm NOAEC (rat) > 2028 ppm
Carcinogenicity data	No evidence of carcinogenicity. (OECD 451)
Other information	None.

## 12. ECOLOGICAL INFORMATION

Ecotoxicity	Low toxicity to fish. LC50 (fish) (typically) >100 mg/l LC50 (fathead minnow) (96 hour) (static) 130 mg/l Harmful to aquatic invertebrates. EC50 (Daphnia magna) (48 hour) 69 mg/l Low toxicity to algae. EC50 (scleractum capricornutum) (96 hour) 170 mg/l NOEC (zebra fish) (35 day) (flow through) 8.4 mg/l The product is substantially removed in biological treatment processes.
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Persistence and degradability	Readily biodegradable. Chemical Oxygen Demand (COD): 88% (28 days) Inherent Biodegradation: Dissolved Organic Carbon Removal (DOC removal): >95% (28 days)
Bioaccumulative potential	The product has low potential for bioaccumulation.
Mobility	The product is predicted to have high mobility in soil.
Other adverse effects	None known.

### 13. DISPOSAL CONSIDERATIONS

Avoid release to the environment. Decontaminate empty drums before recycling.

Disposal methods	Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.
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### 14. TRANSPORT INFORMATION

UN No.	1247
Proper Shipping Name	METHYL METHACRYLATE MONOMER, STABILIZED If material is shipped in quantities greater than 1000 lb. per container, the Proper Shipping Name is RQ METHYL METHACRYLATE MONOMER, STABILIZED
Class	3
Packing group	II
Special precautions for user	No special requirements
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Reportable Quantity (RQ)	1000 lb
TDG Class	3.2 (9.2)
TMD Packing Group	II
Marine Pollutant :	Not classified as a Marine Pollutant.

### 15. REGULATORY INFORMATION

#### US Federal Regulations

Superfund reportable discharge	1000 lb
SARA 302 - Extremely Hazardous Substances	Not listed
SARA 311/312 - Hazard Categories	
Acute	Yes
Chronic	No.
Fire	Yes
Reactivity	Yes
Pressure	No.
SARA 313 - Toxic Chemicals	Listed.

#### US State Regulations

California	Proposition 65 (California) : Not listed
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#### Canadian Regulations

WHMIS Classification	Class B, Division 2, Flammable Liquid Class D, Division 2, Subdivision B, Toxic Material Class F, Dangerously Reactive Material
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#### NFPA Rating

Health 2  
Flammability 3  
Reactivity 2

NPCA-HMIS Rating

Health 2  
Flammability 3  
Reactivity 2

## 16. OTHER INFORMATION

The following sections contain revisions or new statements: 7

Date of preparation: 13 -December- 2012

### Inventory Status

European Union	To the best of our knowledge all chemicals in this product comply with REACH regulations.
United States (TSCA)	Listed in TSCA
Canada (DSL/NDL)	Listed in DSL
Japan (ENCS)	Listed in ENCS
Philippines (PICCS)	Listed in PICCS
Australia (AICS)	Listed in AICS
South Korea (KECI)	Listed in KECI
China (IECSC)	Listed in IECSC

Import to the EU is regulated under REACH. Confirmation from Lucite International UK Ltd acting as Only Representative and registrant is required to confirm that the volume of material imported has been confirmed as within the Only Representative supply chain.

Methacrylate monomers are used safely in a wide variety of applications including some areas of personal hygiene. We are aware of some reports suggesting that use of methacrylate monomers in fingernail extension applications may result in loosening or shedding of the nails of the user as well as respiratory or other effects in those exposed to high levels of the vapors. Lucite International Inc. has performed no technical or clinical testing and has no data to support the use of methacrylate monomers in this application. Under no circumstances should methacrylate monomers be used in this or similar applications.

### MEDICAL USE: CAUTION: DO NOT USE IN MEDICAL APPLICATIONS INVOLVING IMPLANTATION IN THE HUMAN BODY.

Lucite International Inc. has performed no clinical testing on the use of this product in any medical application. Lucite International Inc. has no data to support the use of this product in any medical application. This product was not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. Lucite International Inc. has neither sought, nor received, approval from any regulatory agency for the use of this product in implantation in the human body or in contact with internal body fluids or tissues.

For further information on the properties and uses, or storage and handling, of Methyl Methacrylate refer to Product data sheet; Methyl Methacrylate (TS/C/2108/4), or the Methacrylate Esters Safe Handling Manual.

It is the responsibility of the end-product manufacturer to identify all market and use-specific regulations and to ensure compliance with these regulations.

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