Safety Data Sheet

METHYL METHACRYLATE

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Methyl Methacrylate
Brand	Caseway

1.2 Other means of identification

Synonym(s): Methyl Methacrylate MEHQ 50 PPM INHIBITOR; MMA; methacrylate monomer; methyl ester of methacrylic acid; methyl methacrylate monomer; methyl-2-methyl-2-propenoate

SDS Number: CIP-030

UN/ID No: UN1247

1.3 Recommended use of the chemical and restrictions on use

Product Use: Solvent.
Uses Advised Against: Applications where liquid monomer is intended to come into contact with skin or nails.

1.4 Suppliers details

Name	Caseway Industrial Products, Inc.
Address	3487 Highland Drive Bay City MI 48706 United States
Telephone	19893919992
Fax	19893919994
Email	support@casewayproducts.com

1.5 Emergency phone number

INFOTRAC (Contract: 106140)
North America: 1-800-535-5053
International: 1-352-323-3500

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: OSHA (29 CFR 1910.1200)

- Skin corrosion/irritation, Cat. 2
- Sensitization, skin, Cat. 1
- Specific target organ toxicity (single exposure), Cat. 3
- Flammable liquids, Cat. 2
- Eye damage/irritation, Cat. 2A

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word **Danger**

Hazard statement(s)

H225	Highly flammable liquid and vapor
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness

Precautionary Statement(s)
Prevention

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 … 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.
P280	Wear eye protection/ face protection/ protective gloves.

Response

P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use CO_2, dry chemical, or foam to extinguish.

Storage

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

P501	Dispose of contents/container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Polymerization with heat evolution may occur in presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite vapor and liquid. Take precautionary measures against static discharges.

SECTION 3: Composition/information on ingredients

3.1 Substances

Other names / synonyms	Methyl Methacrylate; MMA; methacrylate monomer; methyl ester of methacrylic acid; methyl methacrylate monomer; methyl-2-methyl-2-propenoate

Impurities and stabilizing additives	Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, reproductive toxins, respiratory tract mutagens, and sensitizers). None of the trace components contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1920.1200), U.S. State equivalents, and Canadian Hazardous Materials Identification System Standard (CPR 4).

Hazardous components

Name	CAS No.	EC No.	Index No.	Concentration (weight)
Methyl Methacrylate	80-62-6	201-297-1	607-035-00-6	>99.9 %

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	If exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.
If inhaled	Remove victim to fresh air and keep in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.
In case of skin contact	Wash off immediately with plenty soap and water while removing all contaminated clothing. Continue rinsing for at least 15 minutes. If skin irritation or allergic reaction occurs, seek medical attention.
In case of eye contact	Rinse immediately with water for at least 15 minutes. Get medical attention.
If swallowed	Do NOT induce vomiting. Clean mouth with water. Get medical attention immediately.

Personal protective equipment for first-aid responders
Wear self-contained breathing apparatus. Avoid contact with skin.

4.2 Most important symptoms/effects, acute and delayed

May cause an allergic skin reaction. Difficulty in breathing. Respiratory irritation. Symptoms of an allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, nausea, and vomiting.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to the affected area. Call an ambulance. Continue flushing during transport to the hospital. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Foam, carbon dioxide, or dry powder.
Unsuitable Extinguishing Media: High volume water jet.

5.2 Specific hazards arising from the chemical

Highly flammable liquid and vapor. Do not use water jet as an extinguisher, as this will spread the fire. Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. Isolate from oxidizers, heat, sparks, electric equipment & open flame. Closed containers may explode if exposed to extreme heat. Vapors are heavier than air and may spread along floors.

5.3 Special protective actions for fire-fighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Do not breathe vapors or fumes. Move containers from fire area if you can do so without risk. Use proper bonding and grounding procedures. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Further information

Flash Point: 50 °F (10 °C)
Auto Ignition Temp: 815 °F (435 °C)
LFL - UFL: LFL: 2.1 %(V) (@ 51 °F) - UFL: 12.5 %(V)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures

Keep unnecessary personnel away. Keep people from and upwind of spill/leak. Eliminate all sources of ignition (non smoking, flares, sparks, flames, and electrical equipment). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

6.2 Environmental precautions

Use appropriate containment to avoid environmental contamination. Avoid discharge into drains, water-courses or onto the ground. Local authorities should be advised if spills cannot be contained.

6.3 Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand, or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand, or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for reuse. Put material in a suitable, covered, labeled container.

Reference to other sections

Waste Disposal: Section 13.
Protective Equipment: Section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store, or open near incompatible materials (See Section 10.), electrical equipment, open flame, sources of heat, or sources of ignition. Protect material from direct sunlight. Use only with adequate ventilation. Avoid breathing fumes, vapors, mist, or spray. Wear OSHA standard chemical resistant goggles, face shield, gloves, apron, & footwear. Use explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges.

7.2 Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks, and open flame. Prevent electrostatic charge build-up using common bonding and grounding techniques. Eliminate sources of ignition. Prevent vapor buildup. Isolate from strong oxidants. Do not store above 86°F (30°C). Keep container tightly closed and upright when not in use to prevent leakage. Fill the container by approximately 90 % only as oxygen (air) is required for stabilization. With large storage containers make sure the oxygen (air) supply is sufficient to ensure stability.

Specific end use(s)
Apart from the uses mentioned in Section 1, no other specified uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Methyl methacrylate (CAS: 80-62-6)
PEL-TWA (Inhalation): 100 ppm (410 mg/m3) (OSHA)
REL-TWA (Inhalation): 100 ppm (410 mg/m3) (NIOSH)
IDLH (Inhalation): 1000 ppm (NIOSH)
TLV®-TWA (Inhalation): 50 ppm (ACGIH) Notes: Dermal Sensitizer (DSEN)
TLV®-STEL (Inhalation): 100 ppm (ACGIH)
PEL-TWA (Inhalation): 50 ppm (205 mg/m3) (Cal/OSHA)
PEL-STEL (Inhalation): 100 ppm (410 mg/m3) (Cal/OSHA)

8.2 Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and quick drench safety shower.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Wear tightly fitting chemical resistant goggles. Wear chemical resistant face-shield to protect against skin and eye contact when appropriate.

Skin protection
Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Material: butyl rubber gloves (minimal thickness 0.3 mm)
Break-through time: 60 min
Guideline: EN 374

Additional Information: The above-mentioned hand protection is based on special knowledge of the chemical and the intended handling of this product, however, it still may not be suitable for all workplaces. A qualified hazard assessment should be made prior to the onset of work in order to determine the suitability of the gloves for specific working environments and processes. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Body protection
Wear appropriate chemical resistant clothing and footwear to prevent skin contact. Use of an impervious apron is recommended.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH-approved air purifying respirator with organic vapor cartridge may be necessary under circumstances where concentrations are expected to exceed exposure limits.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

Environmental exposure controls
Keep away from drains, surface, and ground water.

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid
Appearance	Colorless, Liquid
Color	Colorless
Odor	ester-like
Odor threshold	0.05 - 0.34 ppm
pH	Not data available
Melting point/freezing point	-54.4 °F (-48 °C)
Boiling point or initial boiling point and boiling range	212.54 °F (100.3 °C) 1.013 hPa
Flash point	50 °F (10 °C)
Evaporation rate	No data available.
Flammability	Flammable Liquid
Lower and upper explosion limit/flammability limit	LFL: 2.1 %(V) (@ 51 °F) - UFL: 12.5 %(V)
Vapor pressure	37 hPa (20 °C)
Relative vapor density	approx. 3.5 (20 °C) AIR=1
Density and/or relative density	0.94 g/cm3 (20 °C)
Solubility	15.3 g/l (20 °C)
Partition coefficient n-octanol/water (log value)	1.38 measured
Auto-ignition temperature	815 °F (435 °C)
Decomposition temperature	No data available
Kinematic viscosity	0.564 mm2/s
Explosive properties	Vapors may form explosive mixtures with air
Oxidizing properties	Not oxidizing

Supplemental information regarding physical hazard classes
The substance or mixture is not classified as pyrophoric.

Further safety characteristics (supplemental)
miscible with most organic solvents
Density: 7.84 lbs/gal
Dynamic Viscosity: 0.53 mPa.s (20 °C, Brookefield)
Molecular Formula: C5-H8-O2
Molecular Weight: 100.12 g/mol
Percent Volatile: 100 %
VOC (Weight %): 100 % EPA estimated

SECTION 10: Stability and reactivity

10.1 Reactivity
Not reactive under normal conditions.

10.2 Chemical stability
No decomposition if used as directed.

10.3 Possibility of hazardous reactions
Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

10.4 Conditions to avoid
Keep away from heat and sources of ignition. Protect from direct sunlight. If the permissible storage period and/or temperature is exceeded, the product may polymerize with heat evolution. Avoid incompatible materials.

10.5 Incompatible materials
Peroxides, amines, sulfur compounds, heavy metal ions, alkalis, reducing agents, and oxidizing agents. Mineral Acid Free radical initiators.

10.6 Hazardous decomposition products
Hazardous gases and vapors produced are carbon monoxide, carbon dioxide, and smoke.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Oral LD50 (rat): >5.0 mg/kg
Dermal LD50 (rabbit): >5.0 mg/kg
Inhalation LC50 (rat): 29.8 mg/l

Information on likely routes of exposure
Inhalation: May cause respiratory irritation, drowsiness, dizziness, disorientation, vertigo. Avoid breathing vapors.

Skin Contact: Prolonged skin contact may cause skin sensitization in susceptible individuals. May cause skin irritation. May cause an allergic skin reaction.

Eye Contact: Causes eye irritation.

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/irritation
Causes serious eye irritation.

Respiratory or skin sensitization
May cause an allergic skin reaction.

ACGIH Sensitization: methyl methacrylate (CAS 80-62-6) Sensitizer.

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity
This product is not classified as a carcinogen by IARC, NTP, or OSHA.

Reproductive toxicity
No indications of toxic effects were observed in reproduction studies in animals.

Summary of evaluation of the CMR properties
There is inadequate evidence in humans for the carcinogenicity of methyl methacrylate. There is evidence suggesting lack of carcinogenicity of methyl methacrylate in experimental animals.

STOT-single exposure
May cause respiratory tract irritation.

STOT-repeated exposure
No evidence for hazardous properties.

Aspiration hazard
No evidence for hazardous properties.

Additional information
Symptoms/effects both acute and delayed: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing:

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea, and vomiting.

SECTION 12: Ecological information

Toxicity
Harmful to aquatic life. Do not empty into drains. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Fish
LC50 - Pimephales promelas (96 h): 243 - 275 mg/L [flow-through]
LC50 - Pimephales promelas (96 h): 125.5 - 190.7 mg/L [static]
LC50 - Lepomis macrochirus (96 h): 170 - 206 mg/L [flow-through]
LC50 - Lepomis macrochirus (96 h): 153.9 - 341.8 mg/L [static]

Algae/Aquatic Plants
EC50 - Pseudokirchneriella subcapitata (96 h): 170 mg/L
EC50 - Selenastrum Capricornutum (72 h): >100 mg/L

Crustacea
EC50 - Daphnia magna (48 h): 69 mg/L

Persistence and degradability
(14 d, OECD 301 C): 94% easily biodegradable

Bioaccumulative potential
Accumulation in organisms is not expected due to the coefficient of distribution of n-octanol in water (log Pow).
Log Kow: 1.38 (measured)

Mobility in soil
Binding to the solid soil phase, sediment or clarification sludge is not expected. The substance evaporates gradually into the atmosphere from the surface of water. If the substance does get into the environment, it tends to remain in the compartment it discharged into.

Results of PBT and vPvB assessment
No data available.

Endocrine disrupting properties
No data available.

Other adverse effects
Not determined.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
The generation of waste should be avoided or minimized whenever possible. This material and its container should be disposed of to an approved waste disposal center. All disposal must be in accordance with all federal, state, provincial, and local regulations.

Packaging disposal
Empty containers or liners may retain some product residues. This material and its container should be disposed of to an approved waste disposal center. All disposal must be in accordance with all federal, state, provincial, and local regulations.

Waste treatment
No data available.

Sewage disposal

Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Other disposal recommendations
Care should be taken when handling emptied containers. Do not cut, weld, or grind used containers unless they have been cleaned thoroughly internally.

RCRA: U162 (Methyl Methacrylate (CAS 80-62-6))
RCRA Basis for listing: Included in waste stream: F039
RCRA - U Series Wastes: U162

This product contains one or more substances that are listed with the State of California as a hazardous waste
Methyl Methacrylate (CAS 80-62-6): California hazardous waste status - Toxic, Ignitable

SECTION 14: Transport information

DOT (US)
UN Number: UN1247
Class: 3
Packing Group: II
Proper Shipping Name: Methyl methacrylate monomer, stabilized
Reportable quantity (RQ): 1000 lbs
ERG: 129P

(CFR 173.150) *When transported as a limited quantity inner packaging's must not exceed 1 L (0.3 gallons) each for liquids packed in a strong outer packaging not exceeding 30 kg (66 lbs) gross weight.

IMDG
UN Number: UN1247
Class: 3
Packing Group: II
Proper Shipping Name: Methyl methacrylate monomer, stabilized

IATA
UN Number: UN1247
Class: 3
Packing Group: II
Proper Shipping Name: Methyl methacrylate monomer, stabilized

SECTION 15: Regulatory information

15.1 Safety, health, and environmental regulations specific for the product in question

SARA 311/312 Hazard Categories
Methyl Methacrylate (80-62-6): Acute health hazard, Fire Hazard, Reactive Hazard

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Methyl Methacrylate (80-62-6): Listed

CERCLA Hazardous Substance List (40 CFR 302.4)
Methyl Methacrylate (CAS 80-62-6): Listed

CERCLA Reportable Quantities (RQ)
Methyl Methacrylate (CAS 80-62-6): 1000 lb

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Chemical Name	CWA – Reportable	CWA – Toxic Pollutants	CWA – Priority Pollutants	CWA – Hazardous

	Quantities RQs			Substances
Methyl Methacrylate (CAS: 80-62-6)	1000 lb	-	-	Listed

SARA 313 Components

Chemical Name	CAS No.	EC No.	Concentration (weight)	SARA 313 – Threshold Values
Methyl Methacrylate	80-62-6	201-297-1	30 – 40 %	1.0 %

U.S. State Right To Know Components

Product	California	Massachusetts	New Jersey	New York	Pennsylvania	Rhode Island
Methyl Methacrylate (CAS: 80-62-6)	Listed	Listed	Listed	Listed	Listed	Listed

International Inventories

Product	TSCA	DSL /NDSL	EINECS /ELINCS	ENCS	IECSC	PICCS	AICS	NZIoC	TW	KECI
Methyl Methacrylate (CAS: 80-62-6)	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present

Legend
X – Not present on list
TSCA – United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS – European Inventory of Existing Chemical Substances or European List of Notified Chemical Substances
ENCS – Japanese ENCS (Existing & New Chemical Substances) Inventory
IECSC – Inventory of Existing Chemicals Substances Produced or Imported in China (IECSC)
PICCS – Philippines Inventory of Chemicals and Chemical Substances
AICS – Australian Inventory of Chemical Substances)
NZIoc – New Zealand Inventory of Chemicals
TW – Taiwan National Chemical Inventory
KECI – Korean Existing Chemicals Inventory

15.2 Chemical Safety Assessment
No chemical safety assessment has been carried out for this substance.

HMIS Rating

Methyl Methacrylate	
HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	2
PERSONAL PROTECTION	

NFPA Rating

SECTION 16: Other information

16.1 Further information/disclaimer
The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical resources. While the information is believed to be

accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their handling and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

16.2 Preparation information

Sources of key data used to compile the Safety Data Sheet: Internal technical data, data from raw material SDSs, EPA CompTox Chemical Dashboard (comptox.epa.gov), EPA Substance Registry Services (SRS), OSHA Occupational Chemical Database (https://www.osha.gov/chemicaldata), OSHA 29CFR 1910.1200 Hazard Communication (https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200), European Chemicals Agency (ECHA) C&L Inventory Database (echa.europa.eu), CAMEO Chemicals (cameochemicals.noaa.gov), Code of Federal Regulations CFR Title 49 (https://www.ecfr.gov/current/title-49), California Proposition 65 (https://www.p65warnings.ca.gov/), California Proposition 65 List (https://oehha.ca.gov/proposition-65/proposition-65-list), National Library of Medicine (https://pubchem.ncbi.nlm.nih.gov/), TSCA Chemical Substances Inventory (https://www.epa.gov/tsca-inventory/how-access-tsca-inventory), OECD eChem Portal Search Results (https://www.echemportal.org/echemportal/substance-search).

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