Safety Data Sheet
METHACRYLIC ACID

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Methacrylic Acid
Brand	Caseway
Substance name	METHACRYLIC ACID
EC no.	201-204-4
CAS no.	79-41-4
Index no.	607-088-00-5

1.2 Other means of identification

SDS Number: CIP-031
UN/ID No: UN2531

1.3 Recommended use of the chemical and restrictions on use

USES: Wide-range of polymer based products such as paints and coatings, methacrylate resins and plastics, in organic synthesis and as a synthetic resin for the production of plastic sheets, moldings and fibers.

1.4 Supplier's 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. 1A
- Acute toxicity, oral, Cat. 4
- Acute toxicity, inhalation, Cat. 4
- Acute toxicity, dermal, Cat. 3
- Flammable liquids, Cat. 4
- Specific target organ toxicity (single exposure), Cat. 3
- Eye damage/irritation, Cat. 1

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word **Danger**

Hazard statement(s)

H227	Combustible liquid
H302	Harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H332	Harmful if inhaled
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.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash face, hands, and any exposed skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statement(s) - Response

P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell,
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.
P310	Immediately call a POISON CENTER or doctor/physician.
P330	Rinse mouth.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.

Fire

P370+P378	In case of fire: Use dry chemical, CO2, or alcohol resistant foam to extinguish.

Storage

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.

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 with long lasting effects

SECTION 3: Composition/information on ingredients

3.1 Substances

Name	CAS No.	EC No.	Index No.	Concentration (weight)
Methacrylic Acid	79-41-4	201-204-4	607-088-00-5	90% min
4-Methoxyphenol	150-76-5	205-769-8	604-044-00-7	200 ppm

Formula	C4H6O2
Molecular weight	86.09

Other names / synonyms	2-Propenoic acid, 2-methyl-; Methacrylic acid; 2-Propenoic Acid, 2-Methyl-; METHACRYLIC ACID
Impurities and stabilizing additives	HYDROQUINONE MONOMETHYL ETHER (CAS: 150-76-5): 200 ppm

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. IMMEDIATELY call a physician and be prepared to transport the victim to a hospital even if no symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.
In case of skin contact	IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop. IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas.
In case of eye contact	First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.
If swallowed	DO NOT INDUCE VOMITING. Corrosive chemicals will destroy the membranes of the mouth, throat, and esophagus and, in addition, have a high risk of being aspirated into the victim's lungs during vomiting which increases the medical problems. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. IMMEDIATELY transport the victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. Transport the victim IMMEDIATELY to a hospital.
Personal protective equipment for first-aid responders	Ensure that medical personnel are aware of the material(s) involved, take precautionary measures to protect themselves, and prevent spread of contamination. Avoid contact with skin, eyes, or clothing. Do not use mouth to mouth method if victim ingested or inhaled the substance; give artificial respiration with aid of pocket mask equipped with one-way valve or other proper respiratory medical device. Do not breath vapor or mist.

4.2 Most important symptoms/effects, acute and delayed

Burning sensation. Coughing and/or wheezing. Difficulty in breathing.

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

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur.

Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media
Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.
Unsuitable extinguishing media: Do not scatter spilled material with high pressure water streams.

5.2 Specific hazards arising from the chemical
The product causes burns of eyes, skin, and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Special protective actions for fire-fighters
Keep product and empty container away from heat and sources of ignition. Use self-contained breathing apparatus and full firefighting turnout gear.

Further information
Flash Point: 152°F
LEL: 1.6%
UEL: 8.8%

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures
Shut off and remove all sources of ignition. Evacuate area. Wear self-contained breathing apparatus, rubber boots, and gloves. Keep adequate ventilation. Avoid contact with skin, eyes, or clothing. Take precautionary measures against static discharges. Do not breath vapor or mist.

6.2 Environmental precautions
Do not allow into sewers, on the ground or in bodies of water. Should not be released into the environment. Prevent product from entering drains.

6.3 Methods and materials for containment and cleaning up
Neutralize a spill with sodium carbonate and dilute caustic. Cover with an activated carbon adsorbent, take up and place in a closed container and properly label. Ventilate area. Flush area with soap and water to remove residues.

Reference to other sections
Ecological Information: Section 12.
Protective Measures: Section 7. and Section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Use personal protective equipment. Do not breath vapor or mist. Keep away from heat, hot surfaces, sparks, open flames, and other sources of ignition. No smoking. Take precautionary measures against static discharge. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, or clothing. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink, or smoke while using this product.

7.2 Conditions for safe storage, including any incompatibilities
Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from heat, sparks, flame and other sources ignition (i.e. pilot lights, electric motors, and static electricity). Keep in properly labeled containers. Store in accordance with national regulations. Store in accordance with local regulations. Keep out of reach of children. Store locked up. Protect from moisture. Store away from other incompatible materials.

Store above 17°C (62.6°F) to avoid solidification.

Incompatible materials: Strong acids, Strong bases, oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. METHACRYLIC ACID (CAS: 79-41-4 EC: 201-204-4)

8.2 Appropriate engineering controls

Ventilation should be designed in accordance with good engineering practices. Eyewash and safety showers should be available in areas where this product is handled.

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

Eye/face protection
Chemical resistant splash Full face shield (ANSI Z87.1 or approved equivalent).

Skin protection
Protect all exposed skin from contact.

RECOMMENDED GLOVE MATERIALS
Permeation Test Results for The Neat (Undiluted) Chemical: The permeation test results for the neat (undiluted) chemical are given below. The breakthrough times of this chemical are given for each glove type tested. The table is a presentation of actual test results, not specific recommendations, or suggestions. Avoid glove types which exhibit breakthrough times of less than the anticipated task time plus an adequate safety factor. If this chemical makes direct contact with your glove, or if a tear, puncture, or hole develops, replace them at once.

Glove Type Model Number Thickness Breakthrough Time
Viton North F-091 0.30 mm 480 min
Butyl rubber North B-174 0.58 mm 480 min
Nitrile North LA-1426 0.36 mm 105 min
PVC Edmont 34-100 0.18 mm 0 min

Body protection
If Tyvek-type disposable protective clothing is not worn during handling of this chemical, wear disposable Tyvek-type sleeves taped to your gloves and chemical resistant apron.

Respiratory protection
Wear appropriate NIOSH/MSHA-approved respirator with organic vapor cartridge. When working with this chemical, wear a NIOSH-approved full face positive pressure supplied-air respirator or a self-contained breathing apparatus (SCBA).

Thermal hazards
Wear thermal protective clothing when necessary.

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid
Appearance	Clear Liquid
Color	Colorless
Odor	Acrid, repulsive odor.
Odor threshold	No data available.
pH	No data available.
Melting point/freezing point	16°C (61°F)
Boiling point or initial boiling point and boiling range	163°C (325.4°F)
Flash point	67°C (152.6°F) @ 1013 hPa
Evaporation rate	No data available.
Flammability	Flammable
Lower and upper explosion limit/flammability limit	UEL: 8.8% - LEL: 1.6%
Vapor pressure	0.97 mm Hg @ 25°C (77°F)
Relative vapor density	>1
Density and/or relative density	1.0153 @ 20°C (H20=1)

Solubility	98 g/l (20°C)
Partition coefficient n-octanol/water (log value)	0.93
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Kinematic viscosity	1.359 mm2/s
Explosive properties	No data available.
Oxidizing properties	No data available.

Further safety characteristics (supplemental)
Dynamic Viscosity: 1.38 mPa s (20°C)
Molecular Weight: 86.1 g/mol
Molecular Formula: C4H6O2

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
Stable at room temperature.

10.3 Possibility of hazardous reactions
None under normal conditions of storage and use.

Hazardous Polymerization: May occur. Polymerizes easily, especially in heating or in presence of traces of hydrochloric acid. Avoid heat, oxygen-free atmosphere, and UV-light.

10.4 Conditions to avoid
Avoid high temperatures and sources of ignition. Polymerization may be initiated by contamination with peroxides, azo compounds, heavy metal ions, tertiary amines, sulfur compounds. Polymerization is also initiated by light. Atmospheric oxygen saturation of acrylic/methacrylic monomers is necessary for stability. Avoid ultraviolet light. If product solidifies the inhibitor separates from the methacrylic acid. Thaw SLOWLY without using direct heat. High temperatures may cause uninhibited methacrylic acid to polymerize. The inhibitor will disperse once liquified.

10.5 Incompatible materials
Acids. Bases. Oxidizing agents.

10.6 Hazardous decomposition products
Carbon monoxide, carbon dioxide

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Oral LD50 (rat): 2200 mg/kg
Inhalation LC50 (rat): 7100 mg/m3
Dermal LD50 (rabbit): 500 mg/kg

Information on likely routes of exposure:
Inhalation: May cause irritation, coughing, choking, wheezing, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate.
Eye Contact: May cause stinging, burning, redness, and tearing. Direct contact may result in blindness.
Ingestion: May cause burns of the upper digestive and respiratory tract. May causes severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brown or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking.
Skin Contact: May cause severe irritation, stinging, burning sensation, redness, and burns.

Skin corrosion/irritation
Causes irritation/corrosion to the skin.

Serious eye damage/irritation
Causes serious eye damage. Corrosive to eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.

Respiratory or skin sensitization
Not sensitizing by skin contact. Does not cause asthma. Not known to be sensitizing.

Germ cell mutagenicity
Not mutagenic.

Carcinogenicity
Not expected to be a carcinogen.

Reproductive toxicity
Does not selectively harm reproduction or cause birth defects.

STOT-single exposure
Causes respiratory tract irritation.

STOT-repeated exposure
By inhalation MAA causes damage to mucous membranes of the nose - most pronounced around the site of first contact. Other effects in the body are non-specific.

Additional information
MAA causes severe adverse effects at the site of application, depending on the concentration and frequency or time of exposure. Undiluted MMA may have moderate to high toxicity after oral, dermal, and inhalation exposure.

SECTION 12: Ecological information

Toxicity
Moderately toxic to aquatic organisms on an acute basis.
LC50 - Oncorhynchus mykiss (rainbow trout): 85 mg/l (96 hr.)
EC50 - Daphnia magna (Water flea): >130 mg/l (48 hr.)

Persistence and degradability
aerobic - Exposure time 28 d
Result: 86% - Readily biodegradable
(OECD Test Guideline 301D)

Bioaccumulative potential
Not bioaccumulative.

Mobility in soil
No data available.

Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Endocrine disrupting properties
No data available.

Other adverse effects
Harmful to aquatic life.

SECTION 13: Disposal considerations

Product disposal
Dispose of contents in accordance with regional, national and local regulations to an approved waste disposal plant.

Packaging disposal
Do not reuse container. Dispose of container in accordance with regional, national, and local regulations.

Waste treatment
No data available.

Sewage disposal
No data available.

Other disposal recommendations
US EPA Waste Number: D002

SECTION 14: Transport information

DOT (US)
UN Number: UN2531
Class: 8
Packing Group: II
Proper Shipping Name: Methacrylic Acid, stabilized
ERG No: 153P

IMDG
UN Number: UN2531
Class: 8
Packing Group: II
Proper Shipping Name: Methacrylic Acid, stabilized
EmS-No: F-A, S-B

IATA
UN Number: UN2531
Class: 8
Packing Group: II
Proper Shipping Name: Methacrylic Acid, stabilized

SECTION 15: Regulatory information

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

SARA 313
Section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Acute Health Hazard: Yes
Chronic Health Hazard: Yes
Fire Hazard: Yes
Sudden release pressure hazard: No
Reactive Hazard: No

U.S. State Right To Know Components

Product	California	Massachusetts	New Jersey	New York	Pennsylvania	Rhode Island
Methacrylic Acid	Listed	Listed	Listed	Listed	Listed	Listed

International Inventories

Product	TSCA	DSL /NDSL	EINECS /ELINCS	ENCS	IECSC	PICCS	AICS	NZIoC	TW	KECI
Methacrylic Acid	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

HMIS Rating

METHACRYLIC ACID	
HEALTH	3
FLAMMABILITY	2
PHYSICAL HAZARD	0
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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