

MATERIAL SAFETY DATA SHEET

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Version 1.7

Section 1 - Product and Company Information

Product Name METHACRYLIC ACID, 99%
Product Number 155721
Brand ALDRICH

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
METHACRYLIC ACID	79-41-4	No

Formula C4H6O2
Synonyms Acrylic acid, 2-methyl- * Kyselina methakrylova (Czech) * Methacrylic acid (ACGIH) * alpha-Methylacrylic acid * 2-Methylpropenoic acid * No Lift Nails Primer * 2-Propenoic acid, 2-methyl- (9CI) * Propionic acid, 2-methylene- * 2-Methylpropenoic acid

RTECS Number: OZ2975000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Corrosive.

Harmful in contact with skin and if swallowed. Causes burns.

Readily absorbed through skin. Target organ(s): Liver. Kidneys.

Combustible. Stench.

HMIS RATING

HEALTH: 3*

FLAMMABILITY: 2

REACTIVITY: 2

NFPA RATING

HEALTH: 3

FLAMMABILITY: 2

REACTIVITY: 2

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is

conscious. Call a physician. Do not induce vomiting.

INHALATION EXPOSURE

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

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

EXPLOSION HAZARDS

Container explosion may occur under fire conditions. Closed containers may rupture and explode during runaway polymerization.

FLASH POINT

170.6 °F 77 °C Method: closed cup

EXPLOSION LIMITS

Lower: 1.6 % Upper: 8.7 %

AUTOIGNITION TEMP

400 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Refer to Section 10 of the MSDS for thawing frozen material.

STORAGE

Suitable: Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Other: Faceshield (8-inch minimum).

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	20 PPM
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	20 PPM (SK)

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Clear liquid Color: Colorless	
Property	Value	At Temperature or Pressure
Molecular Weight	86.09 AMU	
pH	2.0 - 2.2	20 °C Concentration: 100 g/l
BP/BP Range	159.0 - 161.0 °C	
MP/MP Range	12 °C	
Freezing Point	N/A	
Vapor Pressure	1 mmHg	20 °C
Vapor Density	> 3 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	1.015 g/cm ³	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	

Viscosity	1.4 Pas	20 °C
Surface Tension	N/A	
Partition Coefficient	Log Kow: 0.93	
Decomposition Temp.	N/A	
Flash Point	170.6 °F 77 °C	Method: closed cup
Explosion Limits	Lower: 1.6 % Upper: 8.7 %	
Flammability	N/A	
Autoignition Temp	400 °C	
Refractive Index	1.431	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Other Solvents: MOSTORGANIC SOLVENTS	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Unstable.

Conditions to Avoid: Heat. Direct sunlight

Materials to Avoid: Amines, Strong bases, Strong acids, Oxidizing agents, Peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: May occur

Hazardous Polymerization Reactions: Loss of inhibitor Methacrylic acid freezes at 15°C (59°F). Do not use any product from frozen or partially frozen methacrylic acid drums. Liquid formed during the thawing process will contain more or less inhibitor than it did before freezing. In some cases, it may contain almost no inhibitor. Until the material is totally thawed and the inhibitor is completely remixed, it is more susceptible than usual to runaway polymerization. For this reason, do not remove any liquid from a partially thawed drum. The only acceptable method of thawing frozen or partially frozen drums of methacrylic acid is to place the drums in a heated room at a temperature between 18°C (64°F) and 40°C (104°F) for 48 hours. Roll or rotate the drums every six to eight hours to mix the contents. After thawing, store the drums between 18°C (64°F) and 40°C (104°F).

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: Readily absorbed through skin. Harmful if absorbed through skin.

Eye Contact: Can cause blindness. Causes burns.

Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Heart. Kidneys. Liver.

SIGNS AND SYMPTOMS OF EXPOSURE

Nausea, headache, and vomiting. Dizziness. Confusion.

Unconsciousness. To the best of our knowledge, the chemical,

physical, and toxicological properties have not been thoroughly investigated. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Exposure can cause:

TOXICITY DATA

Oral
Rat
1060 mg/kg
LD50

Oral
Mouse
1250 mg/kg
LD50

Intraperitoneal
Mouse
48 MG/KG
LD50

Oral
Rabbit
1200 mg/kg
LD50

Skin
Rabbit
500 mg/kg
LD50

Skin
Guinea pig
1000 mg/kg
LD50

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: IC50 Algae
Species: *Selenastrum capricornutum* resp.
Time: 96 h
Value: 0.59 mg/l

Test Type: EC50 Daphnia
Species: *Daphnia magna*
Time: 48 h
Value: > 130 mg/l

Test Type: EC50 Daphnia
Species: *Daphnia magna*
Time: 21 d
Value: 70 mg/l

Test Type: LC50 Fish
Species: *Onchorhynchus mykiss* (Rainbow trout)

Time: 96 h
Value: 85 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

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

Section 14 - Transport Information

DOT

Proper Shipping Name: Methacrylic acid, stabilized
UN#: 2531
Class: 8
Packing Group: Packing Group II
Hazard Label: Corrosive
PIH: Not PIH

IATA

Proper Shipping Name: Methacrylic acid, stabilized
IATA UN Number: 2531
Hazard Class: 8
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: C
Indication of Danger: Corrosive.
R: 21/22-35
Risk Statements: Harmful in contact with skin and if swallowed. Causes severe burns.
S: 26-36/37/39-45
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Corrosive.
Risk Statements: Harmful in contact with skin and if swallowed. Causes burns.
Safety Statements: Keep away from heat. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements: Readily absorbed through skin. Target organ(s): Liver. Kidneys. Combustible. Stench.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.