

Chemical Safety Data Sheet MSDS / SDS

Methacrylic acid

Revision Date:2024-12-21 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name : Methacrylic acid
CBnumber : CB9240023
CAS : 79-41-4
EINECS Number : 201-204-4
Synonyms : Methacrylic acid,2-methacrylic acid

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.
Uses advised against : none

Company Identification

Company : Chemicalbook
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone : 400-158-6606

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P405 Store locked up.

Hazard statements

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

SECTION 3: Composition/information on ingredients

Substance

Product name	: Methacrylic acid
Synonyms	: Methacrylic acid,2-methacrylic acid
CAS	: 79-41-4
EC number	: 201-204-4
MF	: C ₄ H ₆ O ₂
MW	: 86.09

SECTION 4: First aid measures

Description of first aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Carbon oxides Combustible.

Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

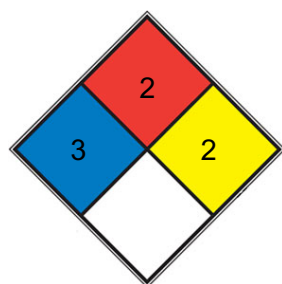
Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

NFPA 704



☒ HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

☒ FIRE 2 Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

☒ REACT 2 Undergoes violent chemical change at elevated temperatures and pressures, reacts violently with water, or may form explosive mixtures with water (e.g. white phosphorus, [potassium](#), [sodium](#))

☐ SPEC.
☐ HAZ.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g.

Chemisorb?). Dispose of properly. Clean up affected area.

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving

in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,7 mm Break through time: 480 min Material tested: Butoject? (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,4 mm Break through time: 120 min

Material tested: Camatril? (KCL 730 / Aldrich Z677442, Size M)

Body Protection

protective clothing

Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

Exposure limits

TLV-TWA 20 ppm ($\sim 70 \text{ mg/m}^3$) (ACGIH).

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Appearance	liquid
Odour	No data available
Odour Threshold	No data available
pH	2.0-2.2 (100g/l, H ₂ O, 20 °C)
Melting point/freezing point	Melting point/range: 12 - 16 °C - lit.
Initial boiling point and boiling range	163 °C - lit.
Flash point	67 °C - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	1.6-8.7%(V)
Vapour pressure	0,97 hPa at 20 °C - (Lit.)
Vapour density	>3 (vs air)
Relative density	No data available
Water solubility	98 g/l at 20 °C - OECD Test Guideline 105
Partition coefficient: n-octanol/water	log Pow: 0,93 at 22 °C

Autoignition temperature	400 °C at 1.013 hPa
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 1,38 mPa.s at 25 °C
Explosive properties	No data available
Oxidizing properties	No data available

Other safety information

Surface tension 65,9 mN/m at 20 °C

- Surface tension

SECTION 10: Stability and reactivity

Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Risk of explosion with:

furfuryl alcohol hydrochloric acid

Violent reactions possible with:

Amines azides Aldehydes

Acid anhydrides Acid chlorides

alkaline earth hydroxides alkali hydroxides

bases Ether

Heavy metal salts Heavy metals Ketones

metallic hydroxides mineral acids

Nitric acid

Nitro compounds nitrates

nitrites Reducing agents

Strong oxidizing agents Strong acids

Violent polymerization may be caused by: iron/iron-containing compounds

sodium hydrogensulfite sodium thiosulphate peroxi compounds Peroxides

persulfates Impurities hydrogen peroxide

Conditions to avoid

Heat. Keep away from direct sunlight. Strong heating.

Incompatible materials

Hazardous decomposition products

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Acute toxicity estimate Oral - 1.320 mg/kg (Calculation method)

LD50 Oral - Rat - male - 1.320 mg/kg (OECD Test Guideline 401)

Acute toxicity estimate Inhalation - 4 h - 1,5 mg/l (Calculation method)

LC50 Inhalation - Rat - male and female - 4 h - 7,1 mg/l (OECD Test Guideline 403)

Acute toxicity estimate Dermal - 300 mg/kg (Calculation method)

LD50 Dermal - Rabbit - 500 - 1.000 mg/kg Remarks: (ECHA)

Skin corrosion/irritation

Skin - Rabbit

Result: Causes severe burns. - 3 min (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes burns. (OECD Test Guideline 405) Causes serious eye damage.

Respiratory or skin sensitization

Buehler Test - Guinea pig Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

Specific target organ toxicity - single exposure

May cause respiratory irritation. - Respiratory system

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Toxicity

LD50 orally in Rabbit: 1320 mg/kg

SECTION 12: Ecological information

Toxicity

Toxicity to fish

flow-through test LC50 - *Oncorhynchus mykiss* (rainbow trout) - 85 mg/l - 96 h
(US-EPA)

Toxicity to daphnia and other aquatic invertebrates

flow-through test EC50 - *Daphnia magna* (Water flea) - > 130 mg/l - 48 h
(US-EPA)

Toxicity to algae

static test NOEC - *Selenastrum capricornutum* (green algae) - 8,2 mg/l - 72 h
(OECD Test Guideline 201)

static test EC50 - *Selenastrum capricornutum* (green algae) - 45 mg/l - 72 h
(OECD Test Guideline 201)

Toxicity to bacteria

static test EC10 - *Pseudomonas putida* - 100 mg/l - 16,5 h (DIN 38412)

Persistence and degradability

Biodegradability Result: 86 % - Readily biodegradable.
(OECD Test Guideline 301D)

Bioaccumulative potential

No data available

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.

Other adverse effects

SECTION 13: Disposal considerations

Waste treatment methods**Incompatibilities**

Incompatible with oxidizers; contact may cause fires or explosions. Aqueous solution is strongly acidic: incompatible with strong acids; caustics, ammonia, amines, isocyanates, alkylene oxides; epichlorohydrin.

Product

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

Waste Disposal

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. All federal, state, and local environmental regulations must be observed.

SECTION 14: Transport information

UN number

ADR/RID: 2531 IMDG: 2531 IATA: 2531

UN proper shipping name

ADR/RID: METHACRYLIC ACID, STABILIZED IMDG: METHACRYLIC ACID, STABILIZED

IATA: Methacrylic acid, stabilized

14.3	Transport hazard class(es)	
	ADR/RID: 8 IMDG: 8	IATA: 8
14.4	Packaging group	
	ADR/RID: II IMDG: II	IATA: II
14.5	Environmental hazards	
	ADR/RID: yes IMDG Marine pollutant: yes	IATA: no
14.6	Special precautions for user	
	No data available	

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015: Listed. website: <https://www.mem.gov.cn/>

Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC): Listed. website: <https://www.mee.gov.cn/>

EC Inventory: Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS): Listed. website: <https://echa.europa.eu/>

Korea Existing Chemicals List (KECL): Listed. website: <http://ncis.nier.go.kr>

New Zealand Inventory of Chemicals (NZIoC): Listed. website: <https://www.epa.govt.nz/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed. website: <https://emb.gov.ph/>

United States Toxic Substances Control Act (TSCA) Inventory: Listed. website: <https://www.epa.gov/>

Vietnam National Chemical Inventory: Listed. website: <https://chemicaldata.gov.vn/>

SECTION 16: Other information

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

References

- 【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- 【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- 【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- 【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- 【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- 【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- 【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- 【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- 【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- 【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

Other Information

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor, or by an authorized person, should be considered. An added stabilizer or inhibitor can influence the toxicological properties of this substance; consult an expert.

Disclaimer:

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