

Chemical Safety Data Sheet MSDS / SDS

2-(Methacryloyloxy)ethyl acetoacetateRevision Date:2026-05-31 Revision Number:1

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

Product name : 2-(Methacryloyloxy)ethyl acetoacetate
CBnumber : CB2759737
CAS : 21282-97-3
EINECS Number : 244-311-1
Synonyms : AAEM,AAEMA

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 : 010-86108875

SECTION 2: Hazards identification**GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Warning

Precautionary statements

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

Hazard statementsH317 May cause an allergic skin reaction

SECTION 3: Composition/information on ingredients**Substance**

Product name : 2-(Methacryloyloxy)ethyl acetoacetate
Synonyms : AAEM,AAEMA

CAS	: 21282-97-3
EC number	: 244-311-1
MF	: C10H14O5
MW	: 214.22

SECTION 4: First aid measures

If inhaled

After inhalation: fresh air.

In case of skin contact

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

In case of eye contact

After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Protection of first-aiders

For personal protection see section 8.

Notes to physician

No data available

SECTION 5: Firefighting measures

Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

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

Specific hazards during fire fighting

Combustible. Vapours 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.

Hazardous combustion products

Carbon oxides

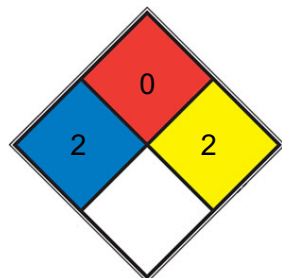
Specific extinguishing methods

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for fire-fighters

In the event of fire, wear self-contained apparatus.

NFPA 704



☒ HEALTH	2	Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. diethyl ether , ammonium phosphate, iodine)
☒ FIRE	0	Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)
☒ 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 vapours, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: 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 with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

SECTION 7: Handling and storage

Handling

Avoidance of contact

Strong oxidizing agents Polymerizing initiators

Storage

Further information on storage conditions

Tightly closed.

Storage class

10, Combustible liquids

Recommended storage temperature

Recommended storage temperature see product label.

Further information on storage stability

Heat sensitive.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures

No data available

Personal protective equipment

Respiratory protection

Not required; except in case of aerosol formation.

Eye/face protection

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

Safety glasses

Hand protection

Material

Nature latex/chloroprene

Break through time

480 min

Glove thickness

0.6 mm

Protective index

Full contact

Manufacturer

Lapren® (KCL 706 / Aldrich Z677558, Size M)

Material

Nitrile rubber

Break through time

120 min

Glove thickness

0.11 mm

Protective index

Splash contact

Manufacturer

(KCL 740 / Aldrich Z677272, Size M)

Manufacturer

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

Remarks

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

clear

Color

colourless, yellow

Odor

odourless

Odor Threshold

Not applicable

pH

No data available

Melting point/ range

< -25 °C

Method: OECD Test Guideline 102

GLP: yes

Boiling point/boiling range

100 °C (1 hPa)

Method: lit.

Flash point

113 °C

Evaporation rate

No data available

Flammability (solid, gas)

No data available

Flammability (liquids)

No data available

Burning rate

No data available

Self-ignition

318 °C 1,024 - 1,027 mbar

Upper explosion limit / Upper flammability limit

No data available

Lower explosion limit / Lower flammability limit

No data available

Vapor pressure

0.24Pa at 25°C

Relative vapor density

No data available

Relative density

1.122 g/mL at 25 °C (lit.)

Density

1.122 g/cm³ (25 °C)

Method: lit.

Water solubility

18.5 g/l (25 °C)

Method: OECD Test Guideline 105

GLP: yes

Partition coefficient: n-octanol/water

log Pow: 0.9 (25 °C)

Method: OECD Test Guideline 107

GLP: yes Bioaccumulation is not expected.

Autoignition temperature

316 - 400 °C (1,024 - 1,027 hPa)

Method: Regulation (EC) No. 440/2008, Annex, A.15

GLP: yes

Decomposition temperature Viscosity: No data available

Viscosity, dynamic

8.19 mPa.s (20 °C)

Method: OECD Test Guideline 114

GLP: yes 4.49 mPa.s (40 °C)

Method: OECD Test Guideline 114

GLP: yes

Viscosity, kinematic

7.31 mm²/s (20 °C)

Method: OECD Test Guideline 114

GLP: yes 4.01 mm²/s (40 °C)

Method: OECD Test Guideline 114

GLP: yes

Flow time

No data available

Explosive properties

Not classified as explosive.

Oxidizing properties

none

Molecular weight

214.22 g/mol

Particle characteristics Particle size

No data available

Refractive index

1.456

Solubility

Insoluble in water

Physical state

clear liquid

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) .

Contains the following stabiliser(s):

butyl hydroxytoluene (BHT) (0.04 %)

Possibility of hazardous reactions

No data available

Conditions to avoid

Contamination Heat Use caution when storing or processing material above 42°C (108°F). May decompose violently if heated above 167°C (332 °F). Strong heating.

Incompatible materials

Strong oxidizing agents Polymerizing initiators

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - > 5,000 mg/kg (OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rat - male and female - > 2,000 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation (OECD Test Guideline 405)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: negative (OECD Test Guideline 429)

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

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: lymphocyte

Metabolic activation: without metabolic activation

Method: OECD Test Guideline 473

Result: Positive results were obtained in some in vitro tests.

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: Positive results were obtained in some in vitro tests.

Test Type: Micronucleus test

Species: Mouse

Cell type: Red blood cells (erythrocytes)

Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

Classified based on available data. For more details, see section 2

Reproductive toxicity

Classified based on available data. For more details, see section 2

Specific target organ toxicity - single exposure

Classified based on available data. For more details, see section 2

Specific target organ toxicity - repeated exposure

Classified based on available data. For more details, see section 2

Aspiration hazard

Classified based on available data. For more details, see section 2

11.2 Additional Information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13: Disposal considerations

Disposal methods

Waste from residues

Offer surplus and non-recyclable solutions to a licensed disposal company.

SECTION 14: Transport information

International Regulations

IATA-DGR

Not regulated as a dangerous good

UN/ID No. : Not applicable

Proper shipping name : Not applicable

Class : Not applicable

Subsidiary risk : Not applicable

Packing group : Not applicable

Labels : Not applicable

Packing instruction (cargo aircraft) : Not applicable

Packing instruction (passenger aircraft) : Not applicable

IMDG-Code

Not regulated as a dangerous good

UN number : Not applicable

Proper shipping name : Not applicable

Class : Not applicable

Subsidiary risk : Not applicable

Packing group : Not applicable

Labels : Not applicable

EmS Code : Not applicable

Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

JT/T 617

UN number : Not applicable

Proper shipping name : Not applicable

Class : Not applicable

Subsidiary risk : Not applicable

Packing group : Not applicable

Labels : Not applicable

Environmentally hazardous : no

Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

National regulatory information

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals

Hazardous Chemicals for Priority Management

Not applicable under SAWS

Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

China Severely Restricted Toxic Chemicals for Import and Export

Not applicable

SECTION 16: Other information

Full text of other abbreviations

AIRC - Australian Inventory of Industrial Chemicals

ANTT - National Agency for Transport by Land of Brazil

ASTM - American Society for the Testing of Materials

bw - Body weight

CMR - Carcinogen, Mutagen or Reproductive Toxicant

DIN - Standard of the German Institute for Standardisation

DSL - Domestic Substances List (Canada)

EC_x - Concentration associated with x% response

EL_x - Loading rate associated with x% response

EmS - Emergency Schedule

ENCS - Existing and New Chemical Substances (Japan)

ErC_x - Concentration associated with x% growth rate response

ERG - Emergency Response Guide
 GHS - Globally Harmonised System
 GLP - Good Laboratory Practice
 IARC - International Agency for Research on Cancer
 IATA - International Air Transport Association
 IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
 IC50 - Half maximal inhibitory concentration
 ICAO - International Civil Aviation Organization
 IECSC - Inventory of Existing Chemical Substances in China
 IMDG - International Maritime Dangerous Goods
 IMO - International Maritime Organisation
 ISHL - Industrial Safety and Health Law (Japan)
 ISO - International Organisation for Standardisation
 KECI - Korea Existing Chemicals Inventory
 LC50 - Lethal Concentration to 50 % of a test population
 LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
 MARPOL - International Convention for the Prevention of Pollution from Ships
 MERCOSUR - The Agreement for the Facilitation of the Transport of Dangerous Goods
 n.o.s. - Not Otherwise Specified
 NCh - Chilean Norm
 NO(A)EC - No Observed (Adverse) Effect Concentration
 NO(A)EL - No Observed (Adverse) Effect Level
 NOELR - No Observable Effect Loading Rate
 NOM - Official Mexican Norm
 NTP - National Toxicology Program
 NZIoC - New Zealand Inventory of Chemicals
 OECD - Organisation for Economic Co-operation and Development
 OPPTS - Office of Chemical Safety and Pollution Prevention
 PBT - Persistent, Bioaccumulative and Toxic substance
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 (Q)SAR - (Quantitative) Structure Activity Relationship
 REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
 SADT - Self-Accelerating Decomposition Temperature
 SDS - Safety Data Sheet
 TCSI - Taiwan Chemical Substance Inventory
 TDG - Transportation of Dangerous Goods
 TECI - Thailand Existing Chemicals Inventory
 TSCA - Toxic Substances Control Act (United States)
 UN - United Nations
 UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods
 vPvB - Very Persistent and Very Bioaccumulative
 WHMIS - Workplace Hazardous Materials Information System

Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.