SIGMA-ALDRICH

sigma-aldrich.com

SAFETY DATA SHEET

Version 5.7 Revision Date 01/28/2015 Print Date 06/24/2015

1. PF	1. PRODUCT AND COMPANY IDENTIFICATION			
1.1	Product identifiers Product name	:	Ethyl acetoacetate	
	Product Number Brand	:	688983 Aldrich	
	CAS-No.	:	141-97-9	
1.2	Relevant identified uses of the substance or mixture and uses advised agains			
	Identified uses	:	Laboratory chemicals, Manufacture of substances	
1.3	3 Details of the supplier of the safety data sheet			
	Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA	
	Telephone Fax	:	+1 800-325-5832 +1 800-325-5052	
		-		

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 4), H227

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram	none
Signal word	Warning
Hazard statement(s) H227	Combustible liquid.
Precautionary statement(s) P210 P280	Keep away from heat/sparks/open flames/hot surfaces No smoking. Wear protective gloves/ protective clothing/ eye protection/ face protection.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235 P501	Store in a well-ventilated place. Keep cool. Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : Acetoacetic ester

Formula	:	С ₆ Н ₁₀ О ₃
Molecular weight	:	130.14 g/mol
CAS-No.	:	141-97-9
EC-No.	:	205-516-1

Hazardous components

Component	Classification	Concentration
Ethyl acetoacetate		
	Flam. Liq. 4; H227	<= 100 %
For the full text of the H-Statements mentioned in this Section, see Section 16.		

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 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

4.3 Indication of any immediate medical attention and special treatment needed No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

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.

Full contact Material: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 480 min Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 30 min Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

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

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.

Body Protection

impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). **Control of environmental exposure** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1	9.1 Information on basic physical and chemical properties			
	a)	Appearance	Form: liquid	
	b)	Odour	No data available	
	c)	Odour Threshold	No data available	
	d)	рН	No data available	
	e)	Melting point/freezing point	Melting point/range: -43 °C (-45 °F) - lit.	
	f)	Initial boiling point and boiling range	181 °C (358 °F) - lit.	
	g)	Flash point	73.5 °C (164.3 °F) - closed cup - Tested according to Annex V of Directive 67/548/EEC.	
	h)	Evaporation rate	No data available	
	i)	Flammability (solid, gas)	No data available	
	j)	Upper/lower flammability or explosive limits	Upper explosion limit: 9.5 %(V) Lower explosion limit: 1.4 %(V)	
	k)	Vapour pressure	0.26 hPa (0.20 mmHg) at 20 °C (68 °F) - OECD Test Guideline 104 0.42 hPa (0.32 mmHg) at 25 °C (77 °F) - OECD Test Guideline 104 3.5 hPa (2.6 mmHg) at 50 °C (122 °F) - OECD Test Guideline 104	
	I)	Vapour density	4.49 - (Air = 1.0)	
	m)	Relative density	1.029 g/cm3 at 20 °C (68 °F) - lit.	
	n)	Water solubility	130 g/l at 20 °C (68 °F) - OECD Test Guideline 105	
	o)	Partition coefficient: n- octanol/water	log Pow: 0.8 at 20 °C (68 °F) - OECD Test Guideline 117	
	p)	Auto-ignition temperature	No data available	
	q)	Decomposition temperature	No data available	
	r)	Viscosity	No data available	
	s)	Explosive properties	No data available	
	t)	Oxidizing properties	No data available	
9.2	Oth	ner safety information		
		Relative vapour density	4.49 - (Air = 1.0)	
		ILITY AND REACTIVITY		
10.1		activity data available		
10.2		emical stability ble under recommended s	torage conditions.	
10.3	Possibility of hazardous reactions No data available			

10.4 Conditions to avoid Heat, flames and sparks.

10.5 Incompatible materials acids, Bases, Oxidizing agents, Reducing agents

10.6 Hazardous decomposition products Other decomposition products - No data available In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - female - 10,800 mg/kg

Inhalation: No data available

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

No data available

Skin corrosion/irritation

Skin - Rabbit Result: No skin irritation - 72 h (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit Result: No eye irritation - 72 h (OECD Test Guideline 405)

Respiratory or skin sensitisation

Maximisation Test (GPMT) - Guinea pig Does not cause skin sensitisation. (OECD Test Guideline 406)

Germ cell mutagenicity

No data available

Carcinogenicity

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard No data available

Additional Information RTECS: AK5250000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

	Toxicity to fish	semi-static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (OECD Test Guideline 203)	
	Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)	
	Toxicity to algae	static test EC50 - Desmodesmus subspicatus (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201)	
12.2	Persistence and degradability		

Biodegradability aerobic Chemical oxygen demand - Exposure time 28 d Result: 66 % - Readily biodegradable (OECD Test Guideline 301D)

- **12.3 Bioaccumulative potential** No data available
- **12.4 Mobility in soil** No data available
- **12.5** Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

NA-Number: 1993 Class: NONE Packing group: III Proper shipping name: Combustible liquid, n.o.s. (Ethyl acetoacetate) Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG Not dangerous goods

IATA Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

_ . _ . .

SARA 311/312 Hazards

Fire Hazard	
-------------	--

Massachusetts Right To Know Components

CAS-No.	Revision Date
141-97-9	1993-04-24
CAS-No.	Revision Date
141-97-9	1993-04-24
CAS-No.	Revision Date
141-97-9	1993-04-24
	CAS-No. 141-97-9 CAS-No.

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Flam. Liq. H227	Flammable liquids Combustible liquid.
HMIS Rating Health hazard: Chronic Health Haza Flammability: Physical Hazard	0 ard: 2 0
NFPA Rating Health hazard: Fire Hazard: Reactivity Hazard:	0 2 0

Further information

Copyright 2015 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. 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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation Product Safety – Americas Region 1-800-521-8956

Version: 5.7

Revision Date: 01/28/2015

Print Date: 06/24/2015