

ALFAAL10925

## Ethyl acetate

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**产品说明:** 乙酸乙酯, 99%  
**Product Description:** Ethyl acetate

**Cat No. :** L10925  
**Synonyms** Acetic acid ethyl ester  
**CAS No** 141-78-6  
**Molecular Formula** C4 H8 O2

**Supplier** Avocado Research Chemicals Ltd.  
(Part of Thermo Fisher Scientific)  
Shore Road, Heysham  
Lancashire, LA3 2XY,  
United Kingdom  
Office Tel: +44 (0) 1524 850506  
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**Emergency Telephone Number** For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

**E-mail address** begel.sdsdesk@thermofisher.com

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

### SECTION 2. HAZARD IDENTIFICATION

**Physical State**  
Liquid

**Appearance**  
Colorless

**Odor**  
sweet

#### Emergency Overview

Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness and dizziness. Repeated exposure may cause skin dryness or cracking.

#### Classification of the substance or mixture

Flammable liquids.	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity - (single exposure)	Category 3

#### Label Elements



## Ethyl acetate

## Signal Word

Danger

## Hazard Statements

H225 - Highly flammable liquid and vapor  
H319 - Causes serious eye irritation  
H336 - May cause drowsiness or dizziness

## Precautionary Statements

## Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P240 - Ground and bond container and receiving equipment  
P241 - Use explosion-proof electrical/ ventilating/ lighting equipment  
P242 - Use non-sparking tools  
P243 - Take action to prevent static discharges  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

## Response

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P312 - Call a POISON CENTER or doctor if you feel unwell  
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

## Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

## Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

## Physical and Chemical Hazards

Vapors may cause flash fire or explosion. Highly flammable.

## Health Hazards

Causes serious eye irritation. May cause drowsiness or dizziness.

## Environmental hazards

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its volatility. The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces.

This product does not contain any known or suspected endocrine disruptors.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Ethyl acetate	141-78-6	<=100

## SECTION 4. FIRST AID MEASURES

## General Advice

If symptoms persist, call a physician.

## Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

## Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

## Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

## Ingestion

Clean mouth with water and drink afterwards plenty of water.

**Most important symptoms and effects**

Difficulty in breathing. May cause central nervous system depression: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

**Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**Notes to Physician**

Treat symptomatically. Symptoms may be delayed.

**SECTION 5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

**Extinguishing media which must not be used for safety reasons**

Do not use a solid water stream as it may scatter and spread fire.

**Specific Hazards Arising from the Chemical**

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Use personal protective equipment as required. Ensure adequate ventilation.

**Environmental Precautions**

Should not be released into the environment. See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

**SECTION 7. HANDLING AND STORAGE****Handling**

Ensure adequate ventilation. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

**Storage**

Flammables area. Keep away from heat, sparks and flame. Keep container tightly closed in a dry and well-ventilated place.

**Specific Use(s)**

Use in laboratories

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

## Ethyl acetate

## Control Parameters

Component	China	Taiwan	Thailand	Hong Kong
Ethyl acetate	TWA: 200 mg/m <sup>3</sup> STEL: 300 mg/m <sup>3</sup>	TWA: 400 ppm TWA: 1440 mg/m <sup>3</sup>	TWA: 400 ppm	TWA: 400 ppm TWA: 1440 mg/m <sup>3</sup>

Component	ACGIH TLV	OSHA PEL	NIOSH	The United Kingdom	European Union
Ethyl acetate	TWA: 400 ppm	(Vacated) TWA: 400 ppm (Vacated) TWA: 1400 mg/m <sup>3</sup> TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>	IDLH: 2000 ppm TWA: 400 ppm TWA: 1400 mg/m <sup>3</sup>	STEL: 1468 mg/m <sup>3</sup> 15 min STEL: 400 ppm 15 min TWA: 734 mg/m <sup>3</sup> 8 hr TWA: 200 ppm 8 hr	TWA: 734 mg/m <sup>3</sup> (8h) TWA: 200 ppm (8h) STEL: 1468 mg/m <sup>3</sup> (15min) STEL: 400 ppm (15min)

## Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

## Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS70 General methods for sampling airborne gases and vapours MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

## Exposure Controls

## Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

## Personal protective equipment

## Eye Protection

Goggles (European standard - EN 166)

## Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Butyl rubber	> 120 minutes	0.5 - 0.7 mm	EN 374 Level 4	Permeation rate 8 µg/cm <sup>2</sup> /min
Nitrile rubber	< 200 minutes			As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
PVA	> 360 minutes	0.3 mm		
Nitrile rubber	< 30 minutes	0.38 mm		

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

## Skin and body protection

Long sleeved clothing

## Respiratory Protection

No protective equipment is needed under normal use conditions.

## Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

## Small scale/Laboratory use

Maintain adequate ventilation

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** No information available.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Colorless	
<b>Physical State</b>	Liquid	
<b>Odor</b>	sweet	
<b>Odor Threshold</b>	50 ppm	
<b>pH</b>	No information available	
<b>Melting Point/Range</b>	-83.5 °C / -118.3 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	75 - 78 °C / 167 - 172.4 °F	
<b>Flash Point</b>	-4 °C / 24.8 °F	<b>Method</b> - CC (closed cup)
<b>Evaporation Rate</b>	6.2	(Butyl Acetate = 1.0)
<b>Flammability (solid,gas)</b>	Not applicable	Liquid
<b>Explosion Limits</b>	<b>Lower</b> 2 Vol%	
	<b>Upper</b> 12 Vol%	
<b>Vapor Pressure</b>	103 mbar @ 20°C	
<b>Vapor Density</b>	3.04	(Air = 1.0)
<b>Specific Gravity / Density</b>	0.902	@ 20 °C
<b>Bulk Density</b>	Not applicable	Liquid
<b>Water Solubility</b>	80 g/l	20 °C
<b>Solubility in other solvents</b>	Miscible Alcohol acetone	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	
Ethyl acetate	0.73	
<b>Autoignition Temperature</b>	427 °C / 800.6 °F	
<b>Decomposition Temperature</b>	No data available	
<b>Viscosity</b>	0.45 cP @ 20 °C	Dynamic
<b>Explosive Properties</b>	Not explosive	Vapors may form explosive mixtures with air
<b>Oxidizing Properties</b>	Not oxidising	(based on the chemical structure of the substance and oxidation states of the constituent elements)
<b>Molecular Formula</b>	C4 H8 O2	
<b>Molecular Weight</b>	88.11	
<b>Surface tension</b>	24 mN/m @ 20°C	

## SECTION 10. STABILITY AND REACTIVITY

<b>Stability</b>	Stable under normal conditions.
<b>Hazardous Reactions</b>	None under normal processing.
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to Avoid</b>	Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.
<b>Materials to avoid</b>	Strong oxidizing agents. Strong acids. Amines. Peroxides.

**Hazardous Decomposition Products** Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

## SECTION 11. TOXICOLOGICAL INFORMATION

## Product Information

## (a) acute toxicity;

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl acetate	10,200 mg/kg ( Rat )	> 20 mL/kg ( Rabbit ) > 18000 mg/kg ( Rabbit )	58 mg/l (rat; 8 h)

## (b) skin corrosion/irritation;

## Test method

Based on available data, the classification criteria are not met

## Test species

OECD 404

## Observational endpoint

rabbit

No skin irritation

## (c) serious eye damage/irritation;

## Test method

Category 2

## Test species

OECD 405

## Observation end point

rabbit eye

Irritating to eyes

## (d) respiratory or skin sensitization;

## Respiratory

Based on available data, the classification criteria are not met

## Skin

Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Ethyl acetate 141-78-6 ( <=100 )	OECD Test Guideline 406	guinea pig	- non-sensitising

## (e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Ethyl acetate 141-78-6 ( <=100 )	OECD Test Guideline 471 AMES test	in vitro Bacteria	negative
	OECD Test Guideline 473 Chromosomal aberration assay	in vitro Mammalian	negative
	OECD Test Guideline 476 Gene cell mutation	in vitro Mammalian	negative
	OECD Test Guideline 474 Mouse micronucleus assay	in vivo Mammalian	negative

## (f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

## (g) reproductive toxicity;

Based on available data, the classification criteria are not met

Component	Test method	Test species / Duration	Study result
Ethyl acetate 141-78-6 ( <=100 )	OECD Test Guideline 416	Oral mouse 2 Generation	NOAEL = 26400 mg/kg bw/day
	OECD Test Guideline 414	Inhalation Rat	NOAEC = 73300 mg/m <sup>3</sup>

## (h) STOT-single exposure;

Category 3

## Results / Target organs

Central nervous system (CNS)

## (i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

## Test method

EPA OTS 795.2600

EPA OTS 798.2450

## Test species / Duration

Rat / 90 days

Rat / 90 days

## Study result

NOAEL = 900 mg/kg bw/day

NOEC = 1.28 mg/l

## Ethyl acetate

Route of exposure	LOAEL = 3600 mg/kg Oral	Inhalation
Target Organs	None known.	

(j) aspiration hazard; Based on available data, the classification criteria are not met

**Symptoms / effects, both acute and delayed** May cause central nervous system depression: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects** Do not empty into drains.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Ethyl acetate	Fathead minnow: LC50: 230 mg/l/ 96h Gold orfe: LC50: 270 mg/L/48h	EC50 = 717 mg/L/48h	EC50 = 3300 mg/L/48h	EC50 = 1180 mg/L 5 min EC50 = 1500 mg/L 15 min EC50 = 5870 mg/L 15 min EC50 = 7400 mg/L 2 h

**Persistence and Degradability** Readily biodegradable  
**Persistence** Persistence is unlikely, based on information available.

Component	Degradability
Ethyl acetate 141-78-6 ( <=100 )	79 % (20 d) (OECD 301 D)

**Bioaccumulative Potential** Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Ethyl acetate	0.73	30 dimensionless

**Mobility in soil** The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air

**Surface tension** 24 mN/m @ 20°C

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors  
**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 13. DISPOSAL CONSIDERATIONS

**Waste from Residues/Unused Products** Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

**Other Information** Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.

## SECTION 14. TRANSPORT INFORMATION

## Ethyl acetate

**Road and Rail Transport**

UN-No UN1173  
Proper Shipping Name ETHYL ACETATE  
Hazard Class 3  
Packing Group II

**IMDG/IMO**

UN-No UN1173  
Proper Shipping Name ETHYL ACETATE  
Hazard Class 3  
Packing Group II

**IATA**

UN-No UN1173  
Proper Shipping Name ETHYL ACETATE  
Hazard Class 3  
Packing Group II

**Special Precautions for User** No special precautions required

**SECTION 15. REGULATORY INFORMATION****International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Ethyl acetate	X	X	X	X	205-500-4	X	X	X	X	X	X	KE-00047

**National Regulations****SECTION 16. OTHER INFORMATION**

**Prepared By** Health, Safety and Environmental Department  
**Creation Date** 13-Oct-2009  
**Revision Date** 26-Apr-2024  
**Revision Summary** New emergency telephone response service provider.

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Chemical incident response training.



## Ethyl acetate

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**Legend****CAS** - Chemical Abstracts Service**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**IECSC** - Chinese Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**ENCS** - Japanese Existing and New Chemical Substances**AICS** - Australian Inventory of Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals**WEL** - Workplace Exposure Limit**ACGIH** - American Conference of Governmental Industrial Hygienists**DNEL** - Derived No Effect Level**RPE** - Respiratory Protective Equipment**LC50** - Lethal Concentration 50%**NOEC** - No Observed Effect Concentration**PBT** - Persistent, Bioaccumulative, Toxic**TWA** - Time Weighted Average**IARC** - International Agency for Research on Cancer**PNEC** - Predicted No Effect Concentration**LD50** - Lethal Dose 50%**EC50** - Effective Concentration 50%**POW** - Partition coefficient Octanol:Water**vPvB** - very Persistent, very Bioaccumulative**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road**OECD** - Organisation for Economic Co-operation and Development**BCF** - Bioconcentration factor**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code**MARPOL** - International Convention for the Prevention of Pollution from Ships**ATE** - Acute Toxicity Estimate**VOC** - (Volatile Organic Compound)**Key literature references and sources for data**<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**