

SAFETY DATA SHEET

Australian statement of hazardous nature: Classified as hazardous according to criteria of Safe Work Australia

Section 1 - Identification

Product Name <u>Ethyl acetate</u>

CAS No 141-78-6

Synonyms Acetic acid ethyl ester

Product Code C14947

Address ThermoFisher Scientific Australia Pty Ltd

5 Caribbean Drive, Scoresby VICTORIA 3179, Australia

Emergency Tel. CHEMTREC®

03 9757 4559 or +613 9757 4559

Telephone / Fax Numbers Tel: 1300 735 292

Fax: 1800 067 639

E-mail address ANZinfo@thermofisher.com

Recommended Use Laboratory chemicals.

Uses advised against This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National

Code of Practice for Chemicals of Security Concern.

Section 2 - Hazard(s) Identification

Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

Physical hazards

Flammable liquids Category 2

Health hazards

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

Environmental hazards

No hazards identified

Label Elements

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Flame

Exclamation Mark

Signal Word Danger

Hazard Statements

H225 - Highly flammable liquid and vapor

H319 - Causes serious eye irritation

H336 - May cause drowsiness or dizziness

AUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P233 - Keep container tightly closed

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

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

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

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

Other information

Section 3 - Composition and Information on Ingredients

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

Section 4 - First Aid Measures

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.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists,

call a physician.

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

medical attention.

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General Advice If symptoms persist, call a physician.

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.

First Aid Facilities Eyewash, safety shower and washroom.

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

Notes to Physician Treat symptomatically. Symptoms may be delayed.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media

Water spray, carbon dioxide (CO2), 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.

Hazardous Decomposition Products

Carbon monoxide (CO), Carbon dioxide (CO2).

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.

Special protective equipment and precautions for fire fighters

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

Emergency procedures

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

Clean-up methods - small spillage

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

Clean-up methods - large spillage

Typically only supplied is small quantiites as packaged goods.

If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

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Precautions for Safe Handling

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

Conditions for Safe Storage, Including any Incompatibilities

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

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals AS 1940-2004 - The storage and handling of flammable and combustible liquids

Section 8 - Exposure Controls and Personal Protection

Exposure limits

AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)] Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia ACGIH - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace. UK - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. DE - MAK and BAT values of Hazardous Chemical Compounds in the Work Area. Published by German Research Foundation on July 1, 2011

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
Ethyl acetate	STEL: 400 ppm	TWA: 200 ppm	TWA: 400 ppm	STEL: 1468 mg/m ³ 15	TWA: 200 ppm (8
	STEL: 1440 mg/m ³	TWA: 720 mg/m ³		min	Stunden). AGW -
	TWA: 200 ppm			STEL: 400 ppm 15 min	exposure factor 2
	TWA: 720 mg/m ³			TWA: 734 mg/m ³ 8 hr	TWA: 730 mg/m ³ (8
				TWA: 200 ppm 8 hr	Stunden). AGW -
					exposure factor 2
					TWA: 200 ppm (8
					Stunden). MAK
					TWA: 750 mg/m ³ (8
					Stunden). MAK
					Höhepunkt: 400 ppm
					Höhepunkt: 1500 mg/m ³

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

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 (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial

applications)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Butyl rubber	> 120 minutes	0.5 - 0.7 mm	AS/NZS 2161	Permeation rate 8 µg/cm2/min As tested
Nitrile rubber	< 200 minutes			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)

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Ensure gloves are suitable for the task: Chemical compatability, 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

Repiratory Protection Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or

other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use

and maintenance of repiratory protective devices (or AUS/NZ equivalent)

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

Environmental exposure controls No information available.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance Colorless Physical State Liquid

Odor sweet Odor Threshold 50 ppm

pH No information available
Melting Point/Range -83.5 °C / -118.3 °F
Softening Point No data available

Boiling Point/Range 75 - 78 °C / 167 - 172.4 °F

Flash Point -4 °C / 24.8 °F Method - CC (closed cup)

Evaporation Rate 6.2 (Butyl Acetate = 1.0)

Flammability (solid,gas) Not applicable Liquid

Explosion Limits Lower 2 Vol% Upper 12 Vol%

Vapor Pressure 103 mbar @ 20°C

 Vapor Density
 3.04
 (Air = 1.0)

 Specific Gravity / Density
 0.902
 @ 20 °C

 Bulk Density
 Not applicable
 Liquid

 Water Solubility
 80 g/l
 20 °C

Solubility in other solvents Miscible Alcohol acetone

Partition Coefficient (n-octanol/water)

Componentlog PowEthyl acetate0.73

Autoignition Temperature 427 °C / 800.6 °F Decomposition Temperature No data available

Viscosity 0.45 cP @ 20 °C Dynamic

Explosive PropertiesNot explosiveVapors may form explosive mixtures with airOxidizing PropertiesNot oxidising(based on the chemical structure of the substance and oxidation states of the constituent elements)

Other information

Molecular Formula C4 H8 O2 Molecular Weight 88.11

Surface tension 24 mN/m @ 20°C

Section 10 - Stability and Reactivity

Reactivity None known, based on information available

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Stability Stable under normal conditions.

Conditions to Avoid Incompatible products, Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials Strong oxidizing agents, Strong acids, Amines, Peroxides.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO₂).

Hazardous Polymerization Hazardous polymerization does not occur.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

OralBased on available data, the classification criteria are not metDermalBased on available data, the classification criteria are not metInhalationBased on available data, the classification criteria are not met

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; Based on available data, the classification criteria are not met

Test method OECD 404
Test species rabbit

Observational endpoint No skin irritation

(c) serious eye damage/irritation; Category 2
Test method OECD 405
Test species rabbit eye
Observation end point Irritating to eyes

(d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Based on available data, the classification criteria are not met

Based on available data, the classification criteria are not met

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

(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

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Component	Australia	New Zealand	New South	Western	IARC	EU		UK	Germany
			Wales	Australia					
Ethyl acetate			listeed						
(g) reproductive toxicity;	g) reproductive toxicity; Based on available data, the classification criteria are not met								
Component		Test	method	Test	species / Dura	ation		Study res	sult
Ethyl acetate		OECD Tes	t Guideline 416	6 Oral	mouse 2 Gene	ration	NOA	EL = 26400 r	ng/kg bw/day
141-78-6 (<=100	O)								
		OECD Tes	t Guideline 414	1	Inhalation Rat		N	NOAEC = 733	00 mg/m ³

(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

LOAEL = 3600 mg/kg

Route of exposure Oral Inhalation

Target Organs None known.

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

Symptoms / effects,both acute and May cause central nervous system depression: Inhalation of high vapor concentrations may

delayed 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:	EC50 = 717 mg/L/48h	EC50 = 3300 mg/L/48h	EC50 = 1180 mg/L 5
	230 mg/l/ 96h			min
	Gold orfe: LC50: 270			EC50 = 1500 mg/L 15
	mg/L/48h			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	79 % (20 d) (OECD 301 D)
141-78-6 (<=100)	,

Bioaccumulative Potential Bioaccumulation is unlikely

Component	log Fow	Bioconcentration factor (BCF)
Ethyl acetate	0.73	30 dimensionless
Mobility	The product contains volatile organic compour surfaces. Will likely be mobile in the environm air	nds (VOC) which will evaporate easily from all ent due to its volatility. Disperses rapidly in

Endocrine Disruptor Information
Persistent Organic Pollutant
Ozone Depletion Potential

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

Section 13 - Disposal Considerations

Waste from Residues/Unused Products

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure

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conformity with all applicable 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 Chemical wastes should be disposed through a licensed commercial waste collection

service. 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

IMDG/IMO

UN-No UN1173

Proper Shipping Name ETHYL ACETATE

Hazard Class 3
Packing Group ||

ADG

UN-No UN1173

Proper Shipping Name ETHYL ACETATE

Hazard Class
Packing Group

i downing or out		
Componen	t	Hazchem Code
Ethyl acetate	e	3YE
141-78-6 (<=1	00)	

IATA

UN-No UN1173

Proper Shipping Name ETHYL ACETATE

Hazard Class 3
Packing Group ||

Environmental hazards No hazards identified

Special Precautions No special precautions required

Additional information None known

Section 15 - Regulatory Information

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

National Regulations Australia

See section 8 for national exposure control parameters.

Standard for the Uniform Scheduling of Medicines and Poisons

No poison schedule number allocated.

Australian Industrial Chemicals Introduction Scheme (AICIS)

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Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Ethyl acetate - 141-78-6	Present	-

Australian - Illicit Drug Precursors/Reagents Substance List

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

Chemicals of Security Concern

This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

National pollutant inventory Subject to reporting requirements

Component	National pollutant inventory
Ethyl acetate - 141-78-6	10 tonne/yr. Threshold category 1

Prohibition or notification/licensing requirements

Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

International Inventories

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Ethyl acetate	X	X	205-500-4	-	Χ	Χ	-	Х	Х	Χ	Х	KE-00047

Legend: X - Listed. '-' - Not Listed. KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

Persistent Organic Pollutant This product does not contain any known or suspected substance

Rotterdam Convention (PIC) Not applicable

Basel convention on the control of transboundary movements of hazardous wastes and their dispoal

Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

Component	Basel Convention (Hazardous Waste)	Australian Hazardous Waste Act - Categories of Wastes to Be Controlled
Ethyl acetate - 141-78-6	Annex I - Y42	Y42 except Halogenated solvents

Γ	Component	CAS No	OECD HPV	Restriction of	Seveso III Directive	Seveso III Directive
1				Hazardous	(2012/18/EC) -	(2012/18/EC) -
1				Substances (RoHS)	Qualifying Quantities	Qualifying Quantities
1					for Major Accident	for Safety Report
L					Notification	Requirements
Ι	Ethyl acetate	141-78-6	Listed	Not applicable	Not applicable	Not applicable

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Authorisation/Restrictions according to EU REACH

Component		REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous	
	Authorization	Substances	List of Substances of Very High Concern (SVHC)
Ethyl acetate	-	Use restricted. See item 75.	-
		(see link for restriction details)	

https://echa.europa.eu/substances-restricted-under-reach

Section 16 - Other Information

Legend

AICS - Australian Inventory of Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - Chinese Inventory of Existing Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

NZS 5433:2012 - Transport of Dangerous Goods on Land

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50% **WEL** - Workplace Exposure Limit

DNEL - Derived No Effect Level **POW** - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

VOC - (Volatile Organic Compound)

NZIoC - New Zealand Inventory of Chemicals

EINECS/ELINCS - European Inventory of Existing Commercial Chemical

Substances/EU List of Notified Chemical Substances **ENCS** - Japanese Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

CAS - Chemical Abstracts Service

ACGIH - American Conference of Governmental Industrial Hygienists

Predicted No Effect Concentration (PNEC)

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

ADG Australian Code for the Transport of Dangerous Goods by Road and Rail

OECD - Organisation for Economic Co-operation and Development

LC50 - Lethal Concentration 50% ATE - Acute Toxicity Estimate

RPE - Respiratory Protective Equipment NOEC - No Observed Effect Concentration

BCF - Bioconcentration factor

PBT - Persistent, Bioaccumulative, Toxic

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

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

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.

Revision Date 20-Nov-2022 Revision Summary Initial Release.

This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).

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

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End of Safety Data Sheet

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