



PRODUCT: ETHYL LACTATE (ETLA) REVISION: 2 **DATED: 14/08/19** **PAGE 1 OF 7**

PRODUCT SPECIFICATION

Product Name Ethyl Lactate
Specification Reference ETLA/2 (15/06/0092395)

Description

Ethyl Lactate 98.5 FCC is a food grade and biodegradable ethyl ester of natural L (+) lactic acid made by fermentation from sugar. It is widely used as a food grade solvent.

SALES SPECIFICATION

Purity		Value
Ethyl lactate content	w/w	Min. 98.5
Acidity (as lactic acid)	% w/w	Max. 0.1
Water content	% w/w	Max. 0.2
Lead	ppm	Max. 10
Arsenic	ppm	Max. 3
Mercury	ppm	Max. 1
Cadmium	ppm	Max. 1
Ethanol	% w/w	Max. 0.2

PHYSICO-CHEMICAL PROPERTIES

Chemical name		Ethyl-S-(-)-2-hydroxy-propionate
Molecular weight	g/mol	118
Molecular formula		C ₅ H ₁₀ O ₃
Density (@20°C/68°F)	g/mL	1.029 – 1.038
Refractive index (@20°C/68°F)	-	1.410 – 1.420
Solubility	-	Totally soluble in water and most organics solvents
Boiling point (1013 mbar)	°C	154
Vapour pressure (@20°C/68°F)	mbar	1.8
Vapour pressure (@100°C/212°F)	mbar	162
Flash point (closed up)	°C	60.5 (ASTM D93 – ISO 2719)
Evaporation rate		(n-butyl acetate = 1.0) 0.22
Sensory Characteristics		
Colour (fresh solution)	Hazen	Max. 30
Odour	-	Characteristic

Other Information

Registration	
Labelling	Flavouring
CAS number	687-47-8
GRAS status	Yes
Complies with	JECFA* – FCC* (*Latest edition)
	Kosher – Halal
Storage conditions	Dry, well-ventilated room
Shelf life	24 months

NOTES

Exclusion of Liability

Information contained in this publication is accurate to the best of the knowledge and belief of Tennants.

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Health and Safety

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.



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SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

1.1 Product Identifier

Trade Name	Ethyl Lactate
Synonyms	Ethyl (S)-2-Hydroxypropionate
EC Index Number	607-129-00-7
CAS Number	687-47-8
EINECS Number	211-694-1
REACH Registration Number	01-2119516234-49-XXXX

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

Identified use(s)

Manufacture of cosmetic products
Manufacturing of cleaning and maintenance products
Industrial and professional use of cleaning and maintenance products
Industrial formulation of lubricant additives, lubricants, greases and heat transfer fluids Industrial handling and dilution of metalworking fluids concentrates
Industrial and professional use of lubricants in high energy open processes
Formulation and use of chemicals
Manufacture of anti-freeze and de-icing products
Manufacture of painted glass articles
Manufacture of electrical equipment
Coformulant in plant protection products
End use of cosmetic products
Consumer use of cleaning and maintenance products
Scented articles
Coformulant in plant protection products

Uses advised against No additional information available

1.3 Details of the supplier of the safety data sheet

Tennants Distribution Limited
Hazelbottom Road
Cheetham
Manchester
M8 0GR
Tel: 44(0)161 205 4454
Fax: 44(0) 161 203 4298
Email: msds@tennantsdistribution.com

1.4 Emergency telephone number

Tel: 44(0)844 335 0001 (24 hours)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation 1272/2008 (CLP)

Flam. Liq. 3	H226
Eye Dam. 1	H318
STOT SE 3	H335

Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. Causes serious eye damage. May cause respiratory irritation.

2.2 Label elements

2.2.1 According to Regulation (EC) No. 1272/2008 (CLP).

Hazard Pictogram



Signal word(s) Danger.

Hazard statement(s)

H226: Flammable liquid and vapour
H318: Causes serious eye damage
H335: May cause respiratory irritation

Precautionary statement(s)



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

P233 - Keep container tightly closed.

P240 - Ground/bond container and receiving equipment.

P280 - Wear protective gloves, protective clothing, eye protection, face protection.

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

P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3 Other hazards

Other hazards not contributing to the classification: None, to our knowledge.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Ethyl Lactate >98%

Product Identifier

(CAS-No.) 687-47-8

(EC-No.) 211-694-1

(EC Index-No.) 607-129-00-7

(REACH-no) 01-2119516234-49-XXXX

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 3, H226 Eye Dam. 1, H318 STOT SE 3, H335

4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation

Move the affected person away from the contaminated area and into the fresh air. If irritation persists, consult a doctor.

Skin contact

Remove all contaminated clothing and footwear. Rinse immediately with plenty of water. In case of redness or irritation, call a doctor.

Eye contact

Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist immediately, even if there are no immediate symptoms.

Ingestion

If the person is fully conscious, try to induce vomiting. Get medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation: Irritation of the respiratory tract.

Symptoms/effects after eye contact: Serious damage to eyes.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media: Water spray. Dry powder. Carbon dioxide (CO₂). Foam.

Unsuitable extinguishing media: No further information

5.2 Special hazards arising from the substance or mixture

Fire hazard: Flammable liquid and vapour.

Hazardous decomposition products in case of fire: Toxic fumes may be released. Carbon oxides (CO, CO₂).

5.3 Advice for fire-fighters

Firefighting instructions: Cool down the containers exposed to heat with a water spray. Contain the extinguishing fluids by bunding.

Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Emergency procedures: Avoid contact with skin and eyes. Do not breathe vapours.

In case of important spillage: Only qualified personnel equipped with suitable protective equipment may intervene.

For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information, refer to section 8: "Exposure controls/personal protection".



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6.2 Environmental precautions

Contain the spilled material by bunding. Do not discharge into drains or rivers.

6.3 Methods and material for containment and cleaning up

For containment

Liquid spill: take up in sand, earth, vermiculite.

Methods for cleaning up

Wash non-recoverable remainder with large amounts of water.

Other information

Dispose of contaminated materials in accordance with current regulations.

6.4 Reference to other sections

For personal protection see Section 8. For waste disposal, see Section 13

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure good ventilation of the work station. Avoid contact with skin and eyes. Do not breathe vapours. Avoid the build-up of electrostatic charge. Ground/bond container and receiving equipment. Do not smoke. No flames, no sparks. Eliminate all sources of ignition.

Handling temperature: < 59 °C

Hygiene measures

Do not drink, eat or smoke in the workplace. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures

Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Storage conditions: Keep container tightly closed and dry. Protect from heat and direct sunlight. Keep away from ignition sources. Store under inert atmosphere.

Incompatible products: Strong oxidising agents.

Packaging materials: Polyethylene.

7.3 Specific end use(s)

No further relevant information

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ethyl lactate (687-47-8)

PNEC (Water)

PNEC aqua (freshwater) 0.32 mg/l

PNEC aqua (marine water) 0.032 mg/l

PNEC aqua (intermittent, freshwater) 3.2 mg/l

PNEC (Sediment)

PNEC sediment (freshwater) 1.66 mg/kg dwt

PNEC sediment (marine water) 0.166 mg/kg dwt

PNEC (Soil)

PNEC soil 0.145 mg/kg dwt

8.2 Exposure controls

Appropriate engineering controls

Ensure good ventilation of the work station.

Personal protective equipment

Gloves. Face-shield.

Hand protection

Impermeable protective gloves (PVA/H4). Breakthrough time (min) : >480

Eye protection

Face-shield

Skin protection

Protective clothing

Respiratory protection

If the ventilation is suitable, it is not essential to wear respiratory equipment. Mist formation: aerosol mask with filter type P2

Environmental exposure controls

Take all necessary precautions to avoid the accidental release of the product outside, due to the rupture of containers or transfer systems.



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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Colour	No data available
Odour	ester like.
Odour threshold	Not established
pH	No data available
Relative evaporation rate (butylacetate=1)	No data available
Melting point	-9 °C (1013 hPa)
Freezing point	Not required
Boiling point	154 °C
Flash point	56 °C
Auto-ignition temperature	400 °C
Decomposition temperature	No data available
Flammability (solid, gas)	Not applicable
Vapour pressure	1.8 mbar (20 °C)
Relative vapour density at 20 °C	4.07
Relative density	No data available
Solubility	Water: Soluble
Log Pow	0.31
Viscosity, kinematic	3.6 mm ² /s (20 °C)
Viscosity, dynamic	2.8 mPa.s (20 °C)
Explosive properties	Not applicable.
Oxidising properties	Not applicable.
Explosive limits	1.5 - 11.4

9.2 Other information

No additional information available

10. STABILITY AND REACTIVITY

10.1 Reactivity

To our knowledge, the product does not present any particular risk.

10.2 Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3 Possibility of hazardous reactions

Can react violently with: Strong oxidising agents.

10.4 Conditions to avoid

High temperature. Hydrolyses on exposure to with (some) acids/bases.

10.5 Incompatible materials

Strong oxidising agents. Attacks some forms of plastics, rubber, and coatings.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Oral Toxicity

Acute toxicity (oral): Not classified (Based on available data, the classification criteria are not met)

Acute toxicity (dermal): Not classified (Lack of data)

Acute toxicity (inhalation): Not classified (Based on available data, the classification criteria are not met)

Ethyl lactate (687-47-8)

LD50 oral rat > 2000 mg/kg (OECD 401)

LC50 inhalation rat > 5.4 mg/l/4h (OECD 403)

Skin Corrosion/Irritation

Not classified (Based on available data, the classification criteria are not met. OECD 404)

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Not classified (Based on available data, the classification criteria are not met. OECD 429.

Respiratory sensitisation : No further relevant information

Germ cell mutagenicity

Not classified (Based on available data, the classification criteria are not met. OECD 471, 473 & 476)

Carcinogenicity

Not classified (Based on available data, the classification criteria are not met)



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Reproductive toxicity

Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure

May cause respiratory irritation.

STOT-repeated exposure

Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard

Not classified (Lack of data)

Ethyl lactate (687-47-8)

Viscosity, kinematic: 3.6 mm²/s (20 °C)

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute aquatic toxicity: Not classified

Chronic aquatic toxicity: Not classified

Ethyl lactate (687-47-8)

LC50 fish: 320 mg/l (96 Hours) (Danio rerio)(OECD 203 method)

EC50 Daphnia: 683 mg/l (Daphnia magna, 48h)(OECD 202 method)

ErC50 (algae): 2300 mg/l (Pseudokirchnerella subcapitata, 96h)(OECD 201 method)

12.2 Persistence and degradability

Ethyl lactate (687-47-8)

Persistence and degradability: Readily biodegradable. 85 % biodegradation /. 28 days (EU Method C5&C6).

12.3 Bio accumulative potential

Ethyl lactate (687-47-8)

Log Pow 0.31

Bioaccumulative potential: Not bioaccumulable.

12.4 Mobility in soil

Ethyl lactate (687-47-8)

Mobility in soil: Small adsorption

12.5 Results of PBT and vPvB assessment

Ethyl lactate (687-47-8)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Results of PBT assessment: The product does not meet the PBT and vPvB classification criteria

12.6 Other adverse effects

No additional information available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of in accordance with relevant local regulations.

14. TRANSPORT INFORMATION

14.1 UN Number

ADR/RID/ADN/IMDG/ICAO

1192

14.2 Proper Shipping Name

ADR/RID/ADN/IMDG/ICAO

ETHYL LACTATE

14.3 Transport hazard class

ADR/RID/ADN Class

3

ADR/RID/ADN Class

Class 3: Flammable liquids

ADR Label No.

3

IMDG Class

3

ICAO Class/Division

3

Transport Labels



14.4 Packing group

ADR/RID/ADN/IMDG/ICAO

III

14.5 Environmental

Environmentally Hazardous Substance/Marine Pollutant

No



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14.6 Special precautions for users Classification Code (ADR) Hazard Identification Number (Kemler No.) EmS Emergency Action Code Hazard No. (ADR) Tunnel Restriction Code	F1 30 F-E, S-D 2Y 30 (D/E)
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable	
15. REGULATORY INFORMATION	
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
EU Legislation: No REACH Annex XVII restrictions Ethyl lactate is not on the REACH Candidate List Ethyl lactate is not on the REACH Annex XIV List	
15.2 Chemical safety assessment A chemical safety assessment has been carried out	
16. OTHER INFORMATION	
Full text of H- and EUH-statements: Eye Dam. 1 Serious eye damage/eye irritation, Category 1 Flam. Liq. 3 Flammable liquids, Category 3 STOT SE 3 Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation H226 Flammable liquid and vapour. H318 Causes serious eye damage. H335 May cause respiratory irritation.	
Source of key data used to compile the data sheet Supplier information	
Modifications from last revision The Specification has been reviewed and updated. The Safety Data Sheet has been revised throughout in accordance with current requirements Date: 14/08/19 Copyright© Tennants Distribution Limited (2019)	