

SAFETY DATA SHEET

Preparation Date: 5/10/2019

Revision date Not Applicable

Revision Number: Not Applicable

1. IDENTIFICATION

Product identifier

Product code: E2835
Product Name: (-)-ETHYL L-LACTATE

Other means of identification

Synonyms: (-)-Ethyl (S)-2-Hydroxypropionate
CAS #: 687-47-8
RTECS # Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Tom Tyner (USA - West Coast)
Contact Person: Ibad Tirmiz (USA - East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 3

Label elements

Danger

Hazard statements

Causes serious eye damage
 May cause respiratory irritation
 Flammable liquid and vapor



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful if swallowed

Precautionary Statements - Prevention

Wear protective gloves/protective clothing/eye protection/face protection
 Avoid breathing mist or vapors
 Use only outdoors or in a well-ventilated area
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking
 Keep container tightly closed
 Ground container and receiving equipment
 Use explosion-proof equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge

In case of fire: Use CO2, dry chemical, or foam to extinguish.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep cool
 Store in a well-ventilated place. Keep container tightly closed
 Store locked up

Precautionary Statements - Disposal

Dispose of contents and container to an approved waste disposal plant in accordance with local, regional, national and international regulations as applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight-%
(-)-Ethyl L-Lactate	687-47-8	100

4. FIRST AID MEASURES

First aid measures

General Advice:

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call

1-800-222-1222.

- Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops. Consult a physician if necessary.
- Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention.
- Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

- Symptoms**
- Irritating to respiratory system
 - Dizziness
 - Lightheadedness
 - Fainting
 - Severe eye irritation
 - Risk of serious damage to eyes
 - May cause skin irritation

Indication of any immediate medical attention and special treatment needed

- Notes to Physician:** Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO₂). Dry chemical. Alcohol-resistant foam. Water spray.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous combustion products Carbon Monoxide, Carbon Dioxide.

Specific hazards Flammable. May be ignited by heat, sparks or flames. Vapor may travel considerable distance to source of ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Container explosion may occur under fire conditions or when heated.

Special Protective Actions for Firefighters

Specific Methods: No information available

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth).

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use clean non-sparking tools to collect absorbed material. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed. Keep in a well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:

Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
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(-)-Ethyl L-Lactate	687-47-8	None	None	None	None
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Canada

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
(-)-Ethyl L-Lactate	687-47-8	None	None	None	None

Australia and Mexico

Component	CAS No	Australia	Mexico
(-)-Ethyl L-Lactate	687-47-8	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles
- Skin and body protection:** Chemical resistant apron
Long sleeved clothing
Gloves
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: Clear.	Color: Colorless.
Odor: Buttery. Fruity.	Taste Sweet. Fruity. Creamy. Pineapple like.	Formula C5H10O3
Molecular/Formula weight (g/mole): 118.13	Flammability (solid, gas) Flammable	Flashpoint (°C/°F): 46 °C/115 °F
Flash Point Tested according to: Closed cup	Autoignition Temperature (°C/°F): 400 °C/752 °F	Lower Explosion Limit (%): 1.5% at 212 deg. F
Upper Explosion Limit (%): 11.4%	Melting point/range(°C/°F): -26 °C/-14.8 °F	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): 154 °C/309.2 °F	Bulk density: No information available	Density (g/cm3): 1.0328
Specific gravity: No information available	pH No information available	Vapor pressure @ 20°C (kPa): 0.21-0.27 @ 20 deg. C.

Evaporation rate:
No information available

Vapor density:
4.07

VOC content (g/L):
No information available

Odor threshold (ppm):
0.83

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
No information available

Miscibility:
Miscible with water
Miscible with alcohol
Miscible with ketones
Miscible with esters
Miscible with hydrocarbons
Miscible with Ether

Solubility:
Soluble in Water
Solubility in Water: 100 g/L @ 25°C

10. STABILITY AND REACTIVITY

Reactivity
No information available

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Strong oxidizing agents

Hazardous decomposition products: Carbon monoxide. Carbon dioxide. When heated to decomposition it emits acrid smoke and irritating fumes.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document
Component Information

(-)-Ethyl L-Lactate

CAS No 687-47-8

LD50/oral/rat = > 2000 mg/kg Oral LD50 Rat

LD50/oral/mouse = No information available

LD50/dermal/rabbit = No information available

LD50/dermal/rat = No information available

LC50/inhalation/rat = >5.4 mg/L Inhalation LC50 Rat 4 h
 LC50/inhalation/mouse = No information available
 Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =
 Value - Acute Tox = > 2000 mg/kg

LD50/oral/mouse =
 Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
 Value - Acute Tox = No information available

LD50/dermal/rat
 VALUE - Acute Tox Dermal = No information available

LC50/inhalation/rat
 VALUE-Vapor = >5.4 mg/l (4-hr)
 VALUE-Gas = No information available
 VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
 VALUE-Vapor = No information available
 VALUE - Gas = No information available
 VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: May cause skin irritation. It may cause mild skin irritation.
Eye Contact: Severly irritating to eyes. Risk of serious damage to eyes.
Inhalation Irritating to respiratory system. May affect behavior/central nervous system (dizziness, lightheadedness, passing out).
Ingestion May be harmful if swallowed. Health injuries are not known or expected under normal use.
Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity No information available.
Sensitization: No information available.
Mutagenic Effects: No information available
Carcinogenic effects: Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances

(-)-Ethyl L-Lactate	687-47-8	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
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ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

(-)-Ethyl L-Lactate - 687-47-8

Algae/aquatic plants EC50: =2200mg/L (70h, Pseudokirchneriella subcapitata)
Fish LC50: =320mg/L (96h, Brachydanio rerio)
Crustacea EC50: =683mg/L (48h, Daphnia magna)

Persistence and degradability: No information available

Bioaccumulative potential: Potential for bioconcentration in aquatic organisms is low.

Mobility in soil It is expected to have high mobility in soil
Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
(-)-Ethyl L-Lactate	687-47-8	None	None	None	None

14. TRANSPORT INFORMATION

DOT

Product code: E2835

Product name: (-)-ETHYL L-LACTATE

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UN-No: UN1192
Proper Shipping Name: Ethyl lactate
Hazard Class 3
Subsidiary Class No information available
Packing group: III
Emergency Response Guide Number 129
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions B1, IB3, T2, TP1
Symbol(s): No information available
Description: UN1192, Ethyl lactate, 3, III

TDG (Canada)

UN-No: UN1192
Proper Shipping Name: Ethyl lactate
Hazard Class 3
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No Information available
Description: UN1192, Ethyl lactate, 3, III

ADR

UN Number UN1192
Proper Shipping Name: Ethyl lactate
Transport hazard class(es) 3
Packing group III
Subsidiary Risk: No information available
Description: UN1192, Ethyl lactate, 3, III

IMDG

UN-No: UN1192
Proper Shipping Name: Ethyl lactate
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No information available
EMS: F-E
Description UN1192, Ethyl lactate, 3, III

RID

UN Number UN1192
Proper Shipping Name: Ethyl lactate
Transport hazard class(es) 3
Subsidiary Risk: No information available
Packing group III
Description: UN1192, Ethyl lactate, 3, III

ICAO (air)

UN-No: UN1192
Proper Shipping Name: Ethyl lactate
Hazard Class 3
Subsidiary Risk: No information available
Packing Group: III
Description: UN1192, Ethyl lactate, 3, III

IATA

UN Number UN1192

Proper Shipping Name: Ethyl lactate
Transport hazard class(es) 3
Subsidiary Risk: No information available
Packing group III
Precautionary Statements - Response 3L
Special Provisions No information available
Description: UN1192, Ethyl lactate, 3, III

15. REGULATORY INFORMATION

International Inventories

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia (AICS)	EINECS-No.
(-)-Ethyl L-Lactate	687-47-8	PresentACTIV E	Not present	Present	Present (2)-1371	Not listed	Not listed	Present 211-694-1

U.S. Regulations

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Component	CAS No	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
(-)-Ethyl L-Lactate	687-47-8	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Component	CAS No	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
(-)-Ethyl L-Lactate	687-47-8	None	None	None	None	None

U.S. TSCA

Component	CAS No	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
(-)-Ethyl L-Lactate	687-47-8	Not Applicable	Not Applicable

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

DSL/NDSL

Component	CAS No	Canada (DSL)	Canada (NDSL)
(-)-Ethyl L-Lactate	687-47-8	Present	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
(-)-Ethyl L-Lactate	687-47-8	Not listed
Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
(-)-Ethyl L-Lactate	687-47-8	Not listed

EU Classification**EU GHS - SV - CLP 1272/2008**

Component	CAS No	EU GHS - SV - CLP (1272/2008)
(-)-Ethyl L-Lactate	687-47-8	Flammable liquids - Flam. Liq. 3: H226 Flammable liquid and vapour.; Serious Eye Damage/Eye Irritation - Eye Dam. 1: H318 Causes serious eye damage.; Specific target organ toxicity - Single exposure - STOT SE 3: H335 May cause respiratory irritation.607-129-00-7

EU - CLP (1272/2008)**R-phrase(s)**

R10 - Flammable
R37 - Irritating to respiratory system
R41 - Risk of serious damage to eyes

S -phrase(s)

S 2 - Keep out of the reach of children.
S24 - Avoid contact with skin
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S39 - Wear eye/face protection

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
(-)-Ethyl L-Lactate	687-47-8	R10 Xi; R37-41	No information	S: (2)-24-26-39

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Flammable
Xi - Irritant

16. OTHER INFORMATION

Preparation Date: 5/10/2019
Revision date: Not Applicable

Product code: E2835

Product name: (-)-ETHYL
L-LACTATE

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Prepared by:

Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet