

SECTION 1. IDENTIFICATION

Product identifier

Trade name : PURASOLV® EL

Other means of identification : Ethyl (S)-lactate (S-isomer); CAS 687-47-8 (S-isomer)
Ethyl lactate (generic); CAS 97-64-3 (generic)

Recommended use of the chemical and restrictions on use

Recommended use : Solvents
Flavors
Speciality chemical

Manufacturer or supplier's details

Company name of supplier : PURAC America Inc.
Address : 8250 Flint Street
Lenexa KS 66214
USA
Telephone : +18006694092
Telefax : +19138884970
E-mail address of person responsible for the SDS : sds@corbion.com

Emergency telephone

CHEMTREC: +1 703-741-5970 / 1-800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 3

Serious eye damage : Category 1

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms :   

Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapor.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

Precautionary Statements : **Prevention:**
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist or vapors.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

P305 + P351 + P338 + P310 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/ doctor.

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.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

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

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	:	Substance
Substance name	:	ethyl (S)-2-hydroxypropionate
CAS-No.	:	687-47-8

Components

Chemical name	CAS-No.	Concentration (% w/w)
ethyl (S)-2-hydroxypropionate	687-47-8	>= 98 - <= 100*

*Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice	:	Call a physician immediately.
If inhaled	:	If breathed in, move person into fresh air.
In case of skin contact	:	Take off all contaminated clothing immediately. If on skin, rinse well with water. If symptoms persist, call a physician.
In case of eye contact	:	Rinse immediately with plenty of water and seek medical advice. If easy to do, remove contact lens, if worn.
If swallowed	:	Rinse mouth. Do not induce vomiting. Drink water. Call physician immediately.
Most important symptoms and effects, both acute and delayed	:	Redness Burn Pain superficial burning sensation tearing Cough Causes serious eye damage. Irritating to respiratory system.
Notes to physician	:	Treat symptomatically. In case of shortness of breath, give oxygen.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Dry powder Foam Carbon dioxide (CO ₂)
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Exposure to decomposition products may be a hazard to health. Vapors may form flammable mixture with air
Further information	:	Use a water spray to cool fully closed containers. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	:	Use personal protective equipment. In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Should not be released into the environment.
Methods and materials for containment and cleaning up	:	Collect as much of the spill as possible with a suitable absorbent material. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. To clean the floor and all objects contaminated by this material, use plenty of water.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Use only with adequate ventilation. Avoid inhalation, ingestion and contact with skin and eyes. Wear personal protective equipment. Do not breathe mist or vapors. Do not eat, drink or smoke when using this product. Wash skin thoroughly after handling. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Conditions for safe storage	:	Keep containers tightly closed in a cool, well-ventilated place. Store locked up. Keep away from sources of ignition - No smoking.
Further information on storage stability	:	Stable at normal ambient temperature and pressure.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection	:	In case of insufficient ventilation, wear suitable respiratory equipment. Suitable respiratory equipment: Equipment should conform to NIOSH Respirator Standard 42 CFR part 84
Filter type	:	Organic vapor Type
Hand protection	:	
Material	:	butyl-rubber
Rate of permeability	:	> 480 min
Glove thickness	:	0.5 mm
Directive	:	Equipment should conform to ANSI/ISEA 105
Eye protection	:	Safety goggles Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols. Equipment should conform to ANSI/ISEA Z87.1
Skin and body protection	:	Long sleeved clothing Boots Chemical resistant apron
Protective measures	:	The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	clear, colorless
Odor	:	mild, characteristic, ester-like
Odor Threshold	:	0.18 ppm
pH	:	No data available
Melting point/range	:	16 °F / -9 °C (1,013 hPa)
Boiling point/boiling range	:	309 °F / 154 °C (1,013 hPa)
Flash point	:	133 °F / 56 °C (1,013 hPa) Method: closed cup
Evaporation rate	:	0.22 (Butyl Acetate=1.0)
Flammability (solid, gas)	:	No data available
Self-ignition	:	806 °F / 430 °C 1,013 hPa
Upper explosion limit / Upper flammability limit	:	Upper flammability limit 11.4 %(V)
Lower explosion limit / Lower flammability limit	:	Lower flammability limit 1.5 %(V)
Vapor pressure	:	2.2 hPa (68 °F / 20 °C)

Relative vapor density	:	No data available
Relative density	:	1.03 (68 °F / 20 °C)
Density	:	1.03 g/cm ³
Bulk density	:	Not applicable
Solubility(ies)		
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	log Pow: 0.03 (68 °F / 20 °C)
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	2.8 mPa.s (68 °F / 20 °C)
Viscosity, kinematic	:	2.718 mm ² /s (68 °F / 20 °C)
Oxidizing properties	:	Not applicable
Surface tension	:	30.4 mN/m, 77 °F / 25 °C
Molecular weight	:	118 g/mol
Particle size	:	Not applicable
Particle Size Distribution	:	No data available
Specific surface area	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Extremes of temperature and direct sunlight. Direct heating, dirt, chemical contamination, sunlight, UV or ionizing radiation.
Incompatible materials	:	Oxidizing agents Bases Acids Metals
Hazardous decomposition products	:	toxic fumes Carbon dioxide (CO ₂) Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified due to lack of data.

Components:

ethyl (S)-2-hydroxypropionate:

Acute oral toxicity	:	LD50 Oral (Rat): > 2,000 mg/kg Method: OECD Test Guideline 401 Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	LC50 (Rat): > 5.4 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation

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

Components:

ethyl (S)-2-hydroxypropionate:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

ethyl (S)-2-hydroxypropionate:

Species	:	Chicken eye
Result	:	Irreversible effects on the eye
Method	:	OECD Test Guideline 438

Respiratory or skin sensitization

Skin sensitization

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

Respiratory sensitization

Not classified due to lack of data.

Components:

ethyl (S)-2-hydroxypropionate:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	Not a skin sensitizer.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

ethyl (S)-2-hydroxypropionate:

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 471 Result: negative Method: OECD Test Guideline 473 Result: negative
-----------------------	---	---

Method: OECD Test Guideline 476
Result: negative

Carcinogenicity

Not classified due to lack of data.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified due to lack of data.

Components:

ethyl (S)-2-hydroxypropionate:

Effects on fetal development : Species: Rat
Developmental Toxicity: NOAEL: 3,619 mg/kg bw/day

STOT-single exposure

May cause respiratory irritation.

Components:

ethyl (S)-2-hydroxypropionate:

Assessment : May cause respiratory irritation.

STOT-repeated exposure

Not classified due to lack of data.

Aspiration toxicity

Not classified due to lack of data.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

ethyl (S)-2-hydroxypropionate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 320 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 683 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Raphidocelis subcapitata (freshwater green alga)): 3,500 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Persistence and degradability

Components:

ethyl (S)-2-hydroxypropionate:

Biodegradability : Result: Readily biodegradable.
Remarks: Based on data from similar materials

Bioaccumulative potential

Components:

ethyl (S)-2-hydroxypropionate:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 4).
Partition coefficient: n-octanol/water : log Pow: 0.03 (68 °F / 20 °C)

Mobility in soil

Components:

ethyl (S)-2-hydroxypropionate:

Stability in soil : Remarks: Not expected to adsorb on soil.

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of as hazardous waste in compliance with local and national regulations.
Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

Domestic regulation

49 CFR

UN/ID/NA number : UN 1192
Proper shipping name : Ethyl lactate
Class : 3
Packing group : III
Labels : FLAMMABLE LIQUID
ERG Code : 129
Marine pollutant : no

International Regulations

UNRTDG

UN number : UN 1192
Proper shipping name : ETHYL LACTATE
Class : 3
Packing group : III

Labels	:	3
Environmentally hazardous	:	no
IATA-DGR		
UN/ID No.	:	UN 1192
Proper shipping name	:	Ethyl lactate
Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355
IMDG-Code		
UN number	:	UN 1192
Proper shipping name	:	ETHYL LACTATE
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-D
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	:	Flammable (gases, aerosols, liquids, or solids)
	:	Serious eye damage or eye irritation
	:	Specific target organ toxicity (single or repeated exposure)

SARA 313	:	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.
-----------------	---	---

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

The ingredients of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

Full text of other abbreviations

AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 20-Nov-2023
Separators: Comma is applied as a thousand separator; Dot is used as a decimal separator; Example 1,234,567.89

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 des-

ignated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN