



SAFETY DATA SHEET

n-Butyl(S)-Lactate, PURASOLV® BL

REVISION DATE 07/05/07
REF. SD0340/2007-01

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY / UNDERTAKING

Product name n-Butyl(S)-Lactate, PURASOLV® BL
Supplier PURAC bioquimica
Gran Vial 19 -25
08160 Montmeló-Barcelona
Spain
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2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name of the substance n-Butyl-S-(-)-2-Hydroxy Propionate
Synonyms Lactic Acid n-Butyl Ester n-Butyl Lactate
n-Butyl-S-(-)- Lactate
CAS-No. 34451-19-9 **EC No.** 252-036-3 **RTECS No.** OD4025000

3. HAZARDS IDENTIFICATION

Most important hazards Risk of serious damage to eyes.
Irritating to eyes and skin.
Specific hazards May degrease the skin.
Effects of skin contacts may include erythema.

4. FIRST AID MEASURES

General advice Show this safety data sheet to the doctor in attendance.
Inhalation Move to fresh air.
Skin contact Wash off immediately with plenty of water.
Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Ingestion Induce vomiting if person is conscious. Consult a physician.
Major effects of exposure Inhalation of vapors is irritating to the respiratory system, and may cause coughing. Irritating to eyes. May degrease the skin.
Protection of firstaiders Wear tightly fitting safety goggles. Do not breathe fumes

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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Water spray, carbon dioxide (CO₂), dry powder, AFFF, foam.
Extinguishing media which must not be used for safety reasons None.
Specific hazards Burning produces irritant fumes.
Special protective equipment for firefighters Use personal protective equipment.
Specific methods Standard procedure for chemical fires.
Cool containers / tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Remove all sources of ignition. Wear tightly fitting safety goggles.
Environmental precautions No special environmental precautions required.
Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, universal binder, sawdust). Shovel into suitable container for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling
Technical measures/ Precautions Remove all sources of ignition.
Avoid temperatures above 140°F (60°C).
Safe handling advice Wear tightly fitting safety goggles. Handle in accordance with good industrial hygiene and safety practice.
Storage
Technical measures/ Storage conditions Keep container tightly closed.
In order to prevent oxidation, the product is supplied under a nitrogen or argon blanket. After opening the packaging, it is recommended to use or store the product under inert conditions (e.g. nitrogen or argon).
Packaging material High density polyethylene containers.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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Engineering measures to reduce exposure Insure adequate ventilation, especially in confined areas.
Control parameters TLV max. 25 mg/m³ (5 ppm)
Personal protection equipment
Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment.
Hand protection Solvent-resistant gloves (PVA / H4).
Eye protection Tightly fitting safety goggles.
Skin and body protection Solvent-resistant apron.
Hygiene measures When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form liquid
Color colorless / light yellow
Odor mild, characteristic
Odor Threshold 0.095mg/m³
pH not applicable
Molecular Weight 146.2
Boiling point/range 372.2°F (189°C)
Melting point/range 5°F (-15°C)
Decomposition temperature >372.2°F (>189°C)
Autoignition temperature 716°F (380°C)
Flash point 174.2°F (79°C) (Tested according to: ISO 3679, closed cup)
Explosion limits - lower: 1.0% @ 212°F (100°C);
- upper: 7.9% @ 302°F (150°C)
Density 964 kg/m³ @ 68°F (20°C)
Vapor density 5.0 (Air = 1)
Vapor pressure 0.3 mbar @ 68°F (20°C), 50 mbar @ 212°F (100°C)
Solubility Water solubility;partly miscible
Partition coefficient (n-octanol/water) log Pow = 1.10
Viscosity 3.9 mPa.S @ 77°F (25°C)
Surface Tension 29.5 mN/m @ 77°F (25°C)

10. STABILITY AND REACTIVITY

Stability Stable at normal conditions.
Conditions to avoid Hydrolyses in presence of water, acids, bases.
Materials to avoid Avoid temperatures above 174.2°F (79°C).
Hazardous decomposition products None.
Carbon oxides.

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11. TOXICOLOGICAL INFORMATION

Acute toxicity LD50/oral/rat > 5000 mg/kg
LC50/inhalation//rat > 5140 mg/m³

Local effects Irritating to eyes and skin. Risk of serious damage to eyes. High concentration of vapors may cause irritation to respiratory system and produce narcotic effects.

Specific effects Based on tests with L-lactic acid and its esters, there is no evidence to suggest carcinogenic nor mutagenic properties from lactic acid itself nor from the lactate portion of its esters.

Long term toxicity Repeated or prolonged exposure may cause irritation of eyes and skin.

Further information Lactate esters are readily hydrolyzed in vivo.

12. ECOLOGICAL INFORMATION

Mobility Partly miscible in water.

Persistence / degradability Readily biodegradable.
Biochemical oxygen demand (BOD)₅ = 0.76 mg O₂ / mg
Chemical oxygen demand (COD) = 1.97 mg O₂/mg

Bioaccumulation Unlikely, hydrolyses in presence of: water, acids, bases.

Ecotoxicity EC50/48h/Daphnia = 423mg/l
LC50/48h/Fish = 75 mg/l EC50/Algae = 0.93 g/l

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products Subject to disposal regulations US EPA 40 CFR 2 62.

Contaminated packaging Clean container with water. Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of European transport regulations.

US DOT Combustible Liquid

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15. REGULATORY INFORMATION

US Regulations

TSCA Inventory Status: Y
SARA III: N
California Proposition 65:N
Carcinogen status: OSHA: N. NTP: N, IARC: N
FDA: GRAS as flavor
Massachusetts Substances List: Y
Pennsylvania Right to Know List: Y
Toxic Substances List of Illinois Dept. of Labor: Y

EU Status

According to National equivalent of EC-Directive 67/548, as amended, the product is labeled as follows:

Symbol

Xi - Irritant

R- Phrases

R41 - Risk of serious damage to eyes.
R38 - Irritating to skin.

S-Phrases

S24 - Avoid contact with skin.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39 - Wear suitable gloves and eye/face protection.

16. OTHER INFORMATION

NFPA Ratings (Scale 0-4): 1(health)-1(flammability)-0(reactivity)
HMIS Rating: 1(health)-2(flammability)-0(reactivity)-B(protective equipment)

CAS-No. 138-22-7 (general) **EC-No.** 205-316-4 (general)

For further information on the safety assessment of lactic acid esters, see the paper titled: Safety Assessment of Lactate Esters, published in Regulatory Toxicology and Pharmacology, 27, 88-97, 1998.

Additional data on the calculated ecotoxicity of lactic acid and its salts and esters can be obtained in a report entitled 'The ecotoxicity and biodegradability of lactic acid, alkyl lactate esters and lactic acid salts' by Bowmer et al. (Reference: Chemosphere 37: 1317-1333 (1998)).

Indicates updated section.

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