

# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 11/10/2022 Supersedes version of: 08/07/2021 Version: 5.1

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Substance  
Name : L-Lactide  
Trade name : Lumilact® L Polymer Grade  
PURALACT® B3  
Chemical name : (3S-cis)-3,6-dimethyl-1,4-dioxane-2,5-dione  
EC-No. : 224-832-0  
CAS-No. : 4511-42-6  
REACH registration No : 01-2119489904-22-0002

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

##### 1.2.1. Relevant identified uses

Use of the substance/mixture : Polymers

##### 1.2.2. Uses advised against:

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

##### Supplier

TotalEnergies Corbion BV  
Stadhuisplein 70  
4203 NS Gorinchem - The Netherlands  
T +31 183 695 695 - F +31 183 695 600  
[pla@totalenergies-corbion.com](mailto:pla@totalenergies-corbion.com)

#### 1.4. Emergency telephone number

Emergency number : +44 1865 407333 (CareChem24)  
Operating hours 24 hours, 7 days a week

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

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

Serious eye damage/eye irritation, Category 2 H319

Full text of H- and EUH-statements: see section 16

##### Adverse physicochemical, human health and environmental effects

Causes serious eye irritation.

# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### 2.2. Label elements

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

Hazard pictograms (CLP)



GHS07

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H319 - Causes serious eye irritation.

Precautionary statements (CLP)

: P264 - Wash hands thoroughly after handling.

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 which do not result in classification : Warning. Potential dust explosion hazard. Dust may form explosive mixture in air.

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

Component	
L-lactide (4511-42-6)	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

The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name : L-Lactide  
CAS-No. : 4511-42-6  
EC-No. : 224-832-0

Name	Product identifier	Conc. (% w/w)	Classification according to Regulation (EC) No. 1272/2008 [CLP]
L-lactide	(CAS-No.) 4511-42-6 (EC-No.) 224-832-0 (REACH-no) 01-2119489904-22-0002	> 98	Eye Irrit. 2, H319

Full text of H- and EUH-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Get medical advice/attention if you feel unwell.

# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: Dust from this product may cause irritation to the respiratory tract.
Symptoms/effects after eye contact	: Burning sensation. Itching. Redness. Tears.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

Explosion hazard	: Dust can form an explosive mixture with air.
Hazardous decomposition products in case of fire	: Under fire conditions, hazardous fumes will be present: Carbon dioxide, Carbon monoxide.

### 5.3. Advice for firefighters

Firefighting instructions	: Evacuate personnel to a safe area. Use water spray or fog for cooling exposed containers. Move containers from fire area if it can be done without personal risk. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment.
Emergency procedures	: Ventilate spillage area. Avoid contact with skin and eyes. Avoid dust formation. Do not touch or walk on the spilled product. Evacuate unnecessary personnel. Do not breathe dust.
Measures in case of dust release	: No flames, no sparks. Eliminate all sources of ignition.

#### 6.1.2. 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

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment	: Stop leak without risks if possible. Avoid creating or spreading dust.
Methods for cleaning up	: Shovel or sweep up and put in a closed container for disposal. Avoid dust formation. Use non-sparking tools. Flush contaminated areas with plenty of water. Never return spills in original containers for possible later re-use.
Other information	: Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed

Precautions for safe handling

Hygiene measures

- : Dust may form flammable and explosive mixture with air.
- : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment. Avoid dust formation. Handle under inert gas. Protect from moisture.
- : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Use good housekeeping practices during storage, transfer, handling, to avoid excessive dust accumulation. Wash contaminated clothing before reuse. Avoid contact with skin, eyes and clothing. Do not breathe dust.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

Incompatible materials

Storage area

- : Keep container tightly closed in a cool, well-ventilated place. Protect from moisture.
- : Water, humidity.
- : Store according to local legislation.

#### 7.3. Specific end use(s)

Annex.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### 8.1.1 National occupational exposure and biological limit values

No additional information available

##### 8.1.2. Recommended monitoring procedures

No additional information available

##### 8.1.3. Air contaminants formed

No additional information available

##### 8.1.4. DNEL and PNEC

No additional information available

##### 8.1.5. Control banding

No additional information available

#### 8.2. Exposure controls

##### 8.2.1. Appropriate engineering controls

**Appropriate engineering controls:**

Ensure good ventilation of the work station. Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment.

##### 8.2.2. Personal protection equipment

**Personal protective equipment symbol(s):**



##### 8.2.2.1. Eye and face protection

**Eye protection:**

Safety glasses with side shields

# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Type	Field of application	Characteristics	Standard
Safety glasses with side shields	Dust		EN 166

### 8.2.2.2. Skin protection

<b>Skin and body protection:</b>	
Wear suitable protective clothing	
Type	Standard
Long sleeved protective clothing	

<b>Hand protection:</b>					
Protective gloves					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Protective gloves	Butyl rubber	6 (> 480 minutes)	0.5		EN 374

### 8.2.2.3. Respiratory protection

<b>Respiratory protection:</b>			
No respiratory protection needed under normal use conditions. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended			
Device	Filter type	Condition	Standard
Dust mask	(FFP2)	Dust protection	EN 149
Half-face mask (DIN EN 140)	Type A/P2	Vapour protection	EN 140

### 8.2.2.4. Thermal hazards

No additional information available

### 8.2.3. Environmental exposure controls

#### Environmental exposure controls:

Avoid release to the environment.

#### Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Use good housekeeping practices during storage, transfer, handling, to avoid excessive dust accumulation. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Do not breathe dust.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: White.
Appearance	: Flakes.
Odour	: Odourless.
Odour threshold	: Not available
Melting point	: 97 °C
Freezing point	: Not available
Boiling point	: 266 °C
Flammability	: Non flammable.
Explosive properties	: Dust explosion hazard in air.
Explosive limits	: Not applicable

# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: 150 °C
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
pH	: Not available
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Water: 16.7 g/l at 20 °C Organic solvent: 16.7 g/100ml Toluene
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: 0.28 Pa (25°C)
Vapour pressure at 50 °C	: Not available
Density	: 0.8 g/cm <sup>3</sup> Flakes
Relative density	: 1.33 Solid
Relative vapour density at 20 °C	: Not applicable
Particle size	: Not available
Particle size distribution	: Not available
Particle shape	: Not available
Particle aspect ratio	: Not available
Particle aggregation state	: Not available
Particle agglomeration state	: Not available
Particle specific surface area	: Not available
Particle dustiness	: Not available

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

Dust deflagration index	: 188 bar·m/s
Dust explosion category	: St 1 - Weak explosion

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. When mixed with air and exposed to an ignition source, dust may burn in the open air or explode if confined.

### 10.4. Conditions to avoid

Protect from moisture. Avoid raising powdered materials into airborne dust, creating an explosion hazard.

### 10.5. Incompatible materials

Water, humidity.

### 10.6. Hazardous decomposition products

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



# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 11: Toxicological information

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

L-lactide (4511-42-6)	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 423 method)
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402 method)
LC50 Inhalation - Rat	> 7.94 mg/l air (OECD 403 method)

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

(3S-cis)-3,6-dimethyl-1,4-dioxane-2,5-dione (4511-42-6)	
Viscosity, kinematic	Not applicable

#### 11.2. Information on other hazards

##### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties	: Contains no substances identified as having endocrine disrupting properties
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##### 11.2.2 Other information

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified
Not rapidly degradable	

L-lactide (4511-42-6)	
LC50 - Fish [1]	130 (130 – 320) mg/l
EC50 - Crustacea [1]	130 (130 – 750) mg/l Daphnia magna
ErC50 algae	3500 mg/l

# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

NOEC chronic algae	> 533 mg/l
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### 12.2. Persistence and degradability

<b>L-lactide (4511-42-6)</b>	
Persistence and degradability	Readily biodegradable.

### 12.3. Bioaccumulative potential

<b>L-lactide (4511-42-6)</b>	
Partition coefficient n-octanol/water (Log Kow)	0.4 (OECD 117 method)
Bioaccumulative potential	There is no bioaccumulation.

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

<b>(3S-cis)-3,6-dimethyl-1,4-dioxane-2,5-dione (4511-42-6)</b>	
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	

<b>Component</b>	
L-lactide (4511-42-6)	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

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : Contains no substances identified as having endocrine disrupting properties

### 12.7. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste) : Dispose in a safe manner in accordance with local/national regulations.  
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not re-use empty containers without proper cleaning or reconditioning.

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number or ID number</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.2. UN proper shipping name</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated



# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### 14.3. Transport hazard class(es)

Not regulated

Not regulated

Not regulated

Not regulated

Not regulated

### 14.4. Packing group

Not regulated

Not regulated

Not regulated

Not regulated

Not regulated

### 14.5. Environmental hazards

Not regulated

Not regulated

Not regulated

Not regulated

Not regulated

No supplementary information available

### 14.6. Special precautions for user

#### Overland transport

Not regulated

#### Transport by sea

Not regulated

#### Air transport

Not regulated

#### Inland waterway transport

Not regulated

#### Rail transport

Not regulated

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

Not listed on REACH Annex XVII

Not listed on the REACH Candidate List

Not listed on REACH Annex XIV (Authorisation List)

Not listed on the PIC list (Regulation EU 649/2012)

Not listed on the POP list (Regulation EU 2019/1021)

Other information, restriction and prohibition regulations

: Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment. in accordance with ATEX directives.

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out

## SECTION 16: Other information

### Indication of changes:

Address. Logo.

### Abbreviations and acronyms:

ADN

European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

# Safety Data Sheet

## L-Lactide

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
DOT	Department of Transportation (DOT)
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

Training advice : Training staff on good practice.

Full text of H- and EUH-statements:	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H319	Causes serious eye irritation.

TotalEnergies Corbion SDS EU (REACH Annex II)

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