

Safety data sheet

FUTERRO D-LACTIDE

Page : 1/10

Product :
PRUB-PLA04

Version (en) nr : 2.1

Revised : 30/07/2010
Supersedes : 15/10/2009



GHS05

1. Identification of the substance / preparation and of the company / undertaking

| | |
|--|--|
| Trade name | FUTERRO D-LACTIDE |
| SDS number | PRUB-PLA04 |
| Chemical name | 3,6-dimethyl-1,4-dioxane-2,5-dione |
| CAS number | 10326-41-7 |
| EINECS or ELINCS number | 233-713-2 |
| MATERIAL USE | raw material |
| Recommended uses and restrictions | Restricted to professional users |
| RESPONSIBLE FOR PLACING ON THE MARKET | |
| Trade name of the firm | see below this page. |
| EMERGENCY NUMBER | FUTERRO : + 32 (0)69 45 22 76 info@futerro.com |
| Official advisory body | The UK National Poisons Emergency number is 0870 600 6266 (Outside the UK: +44 870 600 6266) NB: these services are only available to health professionals IRL: The National Poisons Information Centre PO Box 1297, Beaumont Hospital, Beaumont Road Dublin 9. Telephone: +353 (01) 837 9966 / +353 (01) 809 2568 |

2. Hazards identification

Classification & Labelling

| | |
|------------------------------------|--|
| EC-GHS | Classification according to the regulation EC 1272/2008 (EC-GHS) and ATP |
| Class | Skin Irrit. 2 Eye Dam. 1 STOT SE 3 |
| H Phrase(s) | H315, H318, H335 |
| 67/548/EEC & 1999/45/EC | Classification according to directives 67/548/EEC and 1999/45/EC. |
| Symbol(s) EC | Xi : Irritant |

Safety data sheet


FUTERRO D-LACTIDE

Page : 2/10

Product :
PRUB-PLA04

Version (en) nr : 2.1

Revised : 30/07/2010
Supersedes : 15/10/2009

| | |
|---|--|
| R Phrase(s) | R 37/38 :Irritating to respiratory system and skin. R 41 :Risk of serious damage to eyes. |
| S Phrase(s) | S 24 :Avoid contact with skin. S 26 :In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 37/39 :Wear suitable gloves and eye / face protection. |
| <u>Main hazards</u> | irritant the product reacts with water. hydrolysis in water produces: lactic acid Corrosive |
| Adverse human health effects | |
| Inhalation | fine dust may cause irritation of respiratory system and mucous. exposure to spray, fumes and vapours produced by heated or burned product: irritation of respiratory system. |
| Skin contact | prolonged or frequent contacts may cause skin irritation. in contact with hot material, may cause severe thermal burns |
| Eye contact | Irritating to eyes Risk of serious damage to eyes , loss of vision : lactic acid |
| Ingestion | Risk of irritation of respiratory system May cause gastrointestinal irritation, nausea, vomiting and diarrhoea |
| Adverse environmental effects | the product is inherently biodegradable |
| <u>Label elements</u> | |
| EC-GHS | Classification according to the regulation EC 1272/2008 (EC-GHS) and ATP |
| Signal word | Danger |
| Pictogram(s) | GHS05 |
|  | |
| H Phrase(s) | H315 - Causes skin irritation. H318 - Causes serious eye damage. H335 - May cause respiratory irritation. |
| P Phrase(s) | P262 - Do not get in eyes, on skin, or on clothing. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P305/351/338 - IF IN EYES: Rinse cautiously with water for several |



Safety data sheet

FUTERRO D-LACTIDE

Page : 3/10

Product :
PRUB-PLA04

Version (en) nr : 2.1

Revised : 30/07/2010
Supersedes : 15/10/2009

minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately call a POISON CENTER or doctor/physician.

Other hazards

no information available

3. Composition / information on ingredients

| | |
|-------------------------|------------------------------------|
| chemical name | 3,6-dimethyl-1,4-dioxane-2,5-dione |
| Synonym | D-Lactide |
| Concentration (%) | > 99 % |
| CAS number | 10326-41-7 |
| EINECS or ELINCS number | 233-713-2 |

EC-GHS

| | |
|-------|--|
| Class | Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 |
|-------|--|

67/548/EEC & 1999/45/EC

| | |
|------------------|--|
| Symbol(s) | Xi |
| R Phrase(s) | 37/38-41 |
| H Phrase(s) used | some of the components of this mixture are classified and have hazard statements (H), but only their code are indicated in this rubric. you may find the full text of them in rubric 16. |
| R Phrase(s) used | some of the components of this preparation are classified following the European directives and have risk phrases (R), but only their code are indicated in this rubric. you may find the full text of them in rubric 16. |

4. First-aid measures

Description of first aid measures

IN CASE OF HEAVY OR PERSISTENT DISTURBANCES, CALL A DOCTOR OR SEEK MEDICAL ADVICE URGENTLY

Route of exposure

| | |
|--------------|---|
| Inhalation | bring patient into fresh air if necessary, give oxygen if breathing has stopped: administer artificial respiration. seek medical advice. |
| Skin contact | after contact with skin, wash immediately with plenty of soap and water |
| Eye contact | flush immediately with plenty of water, holding the eyelids open (> 20') |

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Safety data sheet

FUTERRO D-LACTIDE

Page : 4/10

Product :
PRUB-PLA04

Version (en) nr : 2.1

Revised : 30/07/2010
Supersedes : 15/10/2009

| | |
|--|---|
| Ingestion | Get medical advice (ophthalmologist) do not induce vomiting. seek medical advice. |
| Most important symptoms and effects | refer to § 11 for more details on effects. |
| Indication of any medical attention | no information available |

5. Fire - fighting measures

| | |
|--|---|
| Technical measures | stop the fire spreading. call the fire brigade immediately. evacuate non-essential personnel protective clothing, goggles and self-contained breathing equipment should be made available for firemen. |
| Extinguishing media | |
| Suitable | for minor fires : carbon dioxide (CO ₂) or powder for more extensive fires : foam. water spray (mist) to cool the surfaces exposed to the fire. |
| Not to be used | do not use water jets (stick jets) for extinguishing fire since they could help to spread the flames |
| Special peril | complete combustion, with an excess of oxygen forms: carbon dioxide (CO ₂) and water vapour. partial combustion, forms also: carbon monoxide (CO), soot and cracked products: aldehydes, ketones |
| Protective equipment for firefighters | wear suitable breathing equipment, in case of risk of exposure to vapour or fumes. |

6. Accidental release measures

| | |
|---------------------------------|--|
| Personal precautions | |
| For non-emergency personnel | Avoid contact with skin and eyes and inhalation. wear a suitable anti-dust respirator where exposure is likely, protective clothing must be worn including gloves goggles/spectacles |
| For emergency responders | wear suitable breathing equipment, in case of risk of exposure to vapour or fumes. |
| After spillage / leakage | |
| on soil | recover the spilled product by sweeping or suction; put it in containers to facilitate its disposal. dispose safely in accordance with local or national regulations. |



Safety data sheet

FUTERRO D-LACTIDE

Page : 5/10

Product :
PRUB-PLA04

Version (en) nr : 2.1

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Supersedes : 15/10/2009

on water

the product is water soluble.
refer to a specialist for waste disposal in a safe manner in accordance with local or national regulations.

refer to points 8 and 13

7. Handling and storage

Important

refer to any national measures that may be relevant.

HANDLING

Avoid contact with skin and eyes and inhalation.

Technical measures

all pneumatic transport equipment must be electrically earthed.
avoid dust accumulation by use of filters in the pneumatic transport equipment.

STOCKAGE

Storage conditions

store at ambient temperature (< 20 °C)
store away from heating source. avoid static electricity build up with connection to earth.
store in dry, well-ventilated area.

Incompatible materials
container

avoid contact with strong oxidizing materials , water

Suitable

Polyethylene, stainless steel

VbF-Klasse (Germany)

SPECIFIC USE(S)

no information available

refer to point 8

8. Exposure controls / personal protection

Exposure controls

refer to any national measures that may be relevant.

OCCUPATIONAL EXPOSURE LIMIT

respirable dust particles:
US (ACGIH-2009): TLV- 8h TWA: 3 mg/m³
UK: HSE EH40/2005:
Long-term exposure limit (8-hour TWA reference period) : 4 mg/m³
(Respirable Dust)
IRL(2002): OEL (8h): 4 mg/m³ (respirable)
ZA (2006): OEL (8h): 5 mg/m³ (respirable particulate: PNOC)
inhalable dust particles:
US (ACGIH-2009): TLV-8h TWA: 10 mg/m³
UK: HSE EH40/2005:
Long-term exposure limit (8-hour TWA reference period) : 10 mg/m³
(Total Inhalable Dust)
IRL(2002): OEL (8h): 10 mg/m³ (total inhalable)
ZA (2006): OEL (8h): 10 mg/m³ (inhalable particulate: PNOC)

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Safety data sheet

FUTERRO D-LACTIDE

Page : 6/10

Product :
PRUB-PLA04

Version (en) nr : 2.1

Revised : 30/07/2010
Supersedes : 15/10/2009

EXPOSURE CONTROLS

Occupational exposure controls

Personal protection



Respiratory protection

in case of risk of overexposure to dust, vapour or fumes (during product processing), it is recommended that a local exhaust system is placed above the conversion equipment (a fume hood) and the working area must be properly ventilated.
wear a suitable anti-dust respirator
recommended filter type : P1

Skin and body protection

where exposure is likely, protective clothing must be worn including gloves

Eye protection

goggles/spectacles

Other personal protection

safety non-slip shoes in areas where spills or leaks can occur.
shower and eye fountain available.

Industrial health measures

General use

avoid contact with skin and eyes.
do not store near food products.
remove all contaminated clothing and remove protective clothing when the work is completed.

Environmental exposure controls

no information available

9. Physical and chemical properties

GENERAL INFORMATION

| | |
|------------------------|-----------|
| Appearance | crystals |
| Physical state at 20°C | solid |
| Colour | white |
| Odour | odourless |

IMPORTANT HEALTH, SAFETY AND ENVIRONMENTAL INFORMATION

Change in physical state at 1013 hPa

| | |
|-------------------------------|--------------------------|
| Melting point (°C) | 98,7 |
| Flash point (ASTM D 1929)(°C) | 154 |
| Decomposition point (°C) | no information available |

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Safety data sheet

FUTERRO D-LACTIDE

Page : 7/10

Product :
PRUB-PLA04

Version (en) nr : 2.1

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Supersedes : 15/10/2009

| | |
|--|--------------------------|
| Auto-ignition temperature (°C) | 388 |
| Explosion limits (kg/m ³) | no information available |
| Density, mass at 20°C (kg/m ³) | 1340 |
| Solubility in water at 20°C (mg/l) | soluble |
| pH value (concentrated product) | 7 |
| Viscosity (mm ² /s) | not applicable |
| Molecular weight (kg/kmol) | 144 |
| OTHER INFORMATION | no information available |

10. Stability and reactivity

REACTIVITY

Stability stable under normal operating conditions of storage, handling and use
the product reacts with water.
hydrolysis in water produces:
lactic acid
Corrosive

CONDITIONS TO AVOID

water
avoid contact with strong oxidizing materials
avoid proximity or contact with flames or sparks

HAZARDOUS DECOMPOSITION PRODUCTS

complete combustion, with an excess of oxygen forms: carbon dioxide (CO₂) and water vapour.
partial combustion, forms also: carbon monoxide (CO), soot and cracked products: aldehydes, ketones

Hazardous properties

hygroscopic
May polymerize on exposure to temperature rise

11. Toxicological information

ACUTE TOXICITY

Ingestion

in case of ingestion of small quantities, no important effect observed. in case of ingestion of larger amounts: abdominal pain, diarrhoea, ...

Rat, oral LD50 (mg/kg)

> 5

Skin contact

irritant

Rabbit dermal LD50 (mg/kg)

> 2000

LOCAL EFFECT

Inhalation

dust may cause irritation of respiratory system.

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Safety data sheet

FUTERRO D-LACTIDE

Page : 8/10

Product :
PRUB-PLA04

Version (en) nr : 2.1

Revised : 30/07/2010
Supersedes : 15/10/2009

| | |
|--------------|---|
| Skin contact | may be irritating thermal decomposition products are produced at elevated temperatures and these may be irritating |
| Eye contact | Irritating to eyes fine dust may cause irritation to ocular mucous. Risk of serious damage to eyes , loss of vision (lactic acid) |

SENSITIZATION

Skin contact following the available information, not regarded as a sensitiser

SPECIFIC EFFECTS

no particular preoccupation for man
(According to available experimental data)

12. Ecological information

Information on ecological effects

avoid losses to the environment whenever possible.

ECOTOXICITY

because of its structure, the product should not be dangerous for aquatic life

PERSISTENCE AND DEGRADABILITY

Biodegradation

the product is inherently biodegradable

BIOACCUMULATIVE POTENTIAL

potential bioaccumulation of the product in environment is very low

MOBILITY

water / air

the product is water soluble.

soil and sediments

because of its physico-chemical properties, the product has a low soil mobility

Results of PBT and vPvB assessment

non required

13. Disposal considerations

Waste disposal

dispose in a safe manner in accordance with local/national regulations.
authorized disposal
do not dispose off by means of sinks, drains or into the immediate environment

Disposal of contaminated packaging

dispose in a safe manner in accordance with local/national regulations.

14. Transport information

Road (ADR) / Rail (RID)

Not restricted for transport.

UN Number

not applicable

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Safety data sheet

FUTERRO D-LACTIDE

Page : 9/10

Product :
PRUB-PLA04

Version (en) nr : 2.1

Revised : 30/07/2010
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Marine (IMO) Not restricted for transport.
Air transport (ICAO / IATA) Not restricted for transport.

15. Regulatory information

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

Germany

Wassergefährdungsklasse

NWG: non-hazardous to waters

Registration

listed on the ASIA-PAC inventory.
listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)- EEC Directive 79/831, sixth Amendment of the directive 67/548 (dangerous substances).
listed on the United States TSCA (Toxic Substances Control Act) inventory
listed on the Japanese ENCS (Existing & New Chemical Substances) inventory.
listed on the Canadian NDSL (Non Domestic Substances List) inventory.

Other

refer to any national measures that may be relevant.

16. Other information

Training advice

The use of this product requires specific training.
The user must receive all product information in order to handle the product safely
(personal protection equipment and best practice standards)

Further information

no information available

R Phrase(s) used

R 37/38 :Irritating to respiratory system and skin.
R 41 :Risk of serious damage to eyes.

H Phrase(s) used

H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

Safety data sheet conforms to the Regulation (EU) N° 1907/2006

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Product :
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Version (en) nr : 2.1

Page : 10/10
Revised : 30/07/2010
Supersedes : 15/10/2009

This information applies to the PRODUCT AS SUCH and conforming to specifications of FUTERRO. In case of formulations or mixtures, it is necessary to ascertain that a new danger will not appear. The information contained is based on our knowledge of the product, at the date of publishing and it is given quite sincerely. However the revision of some data is in progress. Users are advised of possible additional hazards when the product is used in applications for which it was not intended. This sheet shall only be used and reproduced for prevention and security purposes. The references to legislative, regulatory and codes of practice documents cannot be considered as exhaustive. It is the responsibility of the person receiving the product to refer to the totality of the official documents concerning the use, the possession and the handling of the product. It is also the responsibility of the handlers of the product to pass on to any subsequent persons who will come into contact with the product. (usage, storage, cleaning of containers, other processes) the totality of the information contained within this safety data sheet and necessary for safety at work, the protection of health and the protection of environment.

The (*) indicate the changes made with respect to the previous version.