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

#### 1.1. Product identifier
- **Product form**: Mixture
- **Product name**: D-Lactate dehydrogenase (Leuconostoc mesenteroides)
- **Product code**: E-DLDHLM

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

**1.2.1. Relevant identified uses**
- **Industrial/Professional use spec**: For professional use only
- **Use of the substance/mixture**: Use as laboratory reagent

**1.2.2. Uses advised against**
- No additional information available

#### 1.3. Details of the supplier of the safety data sheet
- **Megazyme**
  - Bray Business Park
  - A98 YV29 Bray - Ireland
  - T +353 12861220 - F +353 12861264
  - cs@megazyme.com - www.megazyme.com

#### 1.4. Emergency telephone number
- **Emergency number**: +353 12861220 [9 am to 5 pm GMT - Monday to Friday]

### SECTION 2: Hazards identification

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

Classification according to Regulation (EC) No. 1272/2008 [CLP]
- Not classified

**Adverse physicochemical, human health and environmental effects**
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]
- EUH-statements: EUH032 - Contact with acids liberates very toxic gas.
  - EUH208 - Contains Dehydrogenase, d-lactate. May produce an allergic reaction.
  - EUH210 - Safety data sheet available on request.

Labelling according to: exemption for inner packaging where the contents do not exceed 10ml
- No labelling required

#### 2.3. Other hazards
- No additional information available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances
- Not applicable

#### 3.2. Mixtures
- This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of REACH annex II

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures
- **First-aid measures general**: Call a poison center or a doctor if you feel unwell.
- **First-aid measures after inhalation**: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.
First-aid measures after skin contact: Wash skin with plenty of water.
First-aid measures after eye contact: Rinse eyes with water as a precaution.
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: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Advice for firefighters
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
Emergency procedures: Ventilate spillage area. Avoid breathing spray, mist.

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".

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Take up liquid spill into absorbent material.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment. Avoid breathing spray, mist.
Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Protective gloves

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>Permeation</th>
<th>Thickness (mm)</th>
<th>Penetration</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable gloves</td>
<td>Nitrile rubber (NBR)</td>
<td>(&gt; 60 minutes)</td>
<td>3</td>
<td>EN 374-2</td>
<td></td>
</tr>
</tbody>
</table>
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Eye protection:
Safety glasses

<table>
<thead>
<tr>
<th>Type</th>
<th>Use</th>
<th>Characteristics</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety glasses</td>
<td>Droplet</td>
<td>With side shields</td>
<td>EN 166</td>
</tr>
</tbody>
</table>

Skin and body protection:
Wear suitable protective clothing

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab coat</td>
<td></td>
</tr>
</tbody>
</table>

Respiratory protection:
[In case of inadequate ventilation] wear respiratory protection.

<table>
<thead>
<tr>
<th>Device</th>
<th>Filter type</th>
<th>Condition</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust mask</td>
<td>Type P1</td>
<td>Protection for Liquid particles</td>
<td>EN 143, EN 149</td>
</tr>
</tbody>
</table>

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>white.</td>
</tr>
<tr>
<td>Odour</td>
<td>None.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

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.
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10.3. Possibility of hazardous reactions
Contact with acids liberates very toxic gas.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
Acids.

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

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.

Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods : Dispose of contents/container in accordance with licensed collector’s sorting instructions.

SECTION 14: Transport information

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

<table>
<thead>
<tr>
<th>ADR</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.2. UN proper shipping name</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>ADR</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.3. Transport hazard class(es)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.4. Packing group</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.5. Environmental hazards</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

No supplementary information available

14.6. Special precautions for user
- Overland transport
  Not applicable
- Air transport
  Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
  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
  Contains no REACH substances with Annex XVII restrictions
  Contains no substance on the REACH candidate list
  Contains no REACH Annex XIV substances

15.1.2. National regulations
  No additional information available

15.2. Chemical safety assessment
  No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:
EUH032 Contact with acids liberates very toxic gas.
EUH208 Contains . May produce an allergic reaction.
EUH210 Safety data sheet available on request.

SDS EU (REACH Annex II)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.