1/2 Product Name: Lactate oxidase (LCO-301)
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SDS No. 317F

10 Chemical Product and Company Identification

10.1 Identification of the product Lactate oxidase
Product Code LCO-301
Supplier Name TOYOBO CO., LTD.
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10.2 Recommended use and restrictions on use

10.3 Hazard Identification
Most Important Hazards and Effects The product might cause allergic reactions upon inhaling or skin contact because of the protein contained.

GHS classification Classification not possible

30 Composition/Information on Ingredients

30.1 Substance/Mixture Mixture
Chemical Nature Lactate oxidase
CAS# 9028-72-2
Concentration or concentration range ca. 35-55 % (W/W)
Stabilizer, etc ca. 45-65 % (W/W)
The ingredients known as hazardous are not included.

40 First Aid Measures

40.1 Inhalation Remove to fresh air. Consult a physician when unpleasantness occurs.

40.2 Skin Contact Wash off with plenty of water. Consult a physician when inflammation on the skin occurs.

40.3 Eye Contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

40.4 Ingestion Swill plentiful amount of water or milk for immediate vomiting, consult a physician.

50 Fire Fighting Measures
Extinguishing Media Water spray, dry chemical powder, or carbon dioxide etc.

60 Protection of Firefighters Avoid working at leeward.

60.1 Accidental Release Measures
Environmental Precautions High concentrated waste fluid should not be directly discharged into rivers.
Clean up the solution spilled with cloth, paper or anything similar to soak up the solution leaking out of the container.

70 Handling and Storage

70.1 Handling Technical Measures Wear protective gear to avoid eye/skin contact and inhalation.
Do not drop the container to prevent the content popping out.
Precautions None specified.

70.2 Storage Technical Measures Keep sealed container in freezer
Incompatible substances and mixtures None specified.
Storage Conditions Store below -20°C to prevent deactivating.
Packaging Materials Use the initial container of the product.

80 Exposure Controls/Personal Protection

80.1 Engineering Measures Provide shower and eye washing apparatus nearby.

80.2 Personal Protective Equipment
Respiratory Protection Protecting mask.
Hand Protection Protecting gloves (rubbers or plastic gloves etc.).
Eye Protection Safety goggles.
Skin and Body Protection Long sleeve working wear.

80.3 Methods and materials for containment and cleaning up.

80.4 Ingredients Contributing to the Hazard

80.5 Safety Data Sheet
Personal Precautions, protective equipment and emergency procedure.

**Physical and Chemical Properties**

- **Physical State:** Powder
- **Colour/Odour:** Yellow / No odour
- **pH:** ca. pH 6.2-7.2 in the case of 100mg/ml in water.
- **Decomposition Temperature:** No information available.
- **Flash Point:** No information available.
- **Density:** No information available.
- **Solubility:** Easily soluble in water.

**Stability and Reactivity**

- **Stability:** Stable at temperatures below -20°C. When left for long at room temperature, proteins might be degraded, which does not cause any hazardous reaction.
- **Possible hazard reactions at specific condition:** Not specified.
- **Conditions to avoid:** Prolonged storage at temperatures higher than room temperature and high humidity.
- **Materials to avoid:** Any materials which dissolve or destroy proteins such as strong acid or alkali.
- **Hazardous Decomposition Products:** No information available.

**Toxicological Information**

- **Acute Toxicity:** No information available.
- **Skin corrosion/irritation:** No information available.
- **Eye damage/irritation:** No information available.
- **Sensitization:** No information available.
- **Germ cell mutagenicity:** No information available.
- **Specific target organ systemic toxicity:** (Repeated exposure) Aspiration toxicity
- **Carcinogenicity:** No information available.
- **Toxic to reproduction:** No information available.
- **Specific target organ toxicity:** (Single exposure)

**Ecological Information**

- **Persistence/Degradability:** This product is biodegradable and does not remain on the environment for long.

**Disposal Considerations**

- **Residues:** Dispose of in accordance with all applicable local and national laws and regulations.
- **Contaminated packaging:** Wash with copious amounts of water and waste conforming to local regulations depending on the type of the material.

**Transport Information**

- **International Regulations:** Not applicable.
- **Domestic Regulations:** Not applicable.
- **Specific Precautions:** Keep at temperatures below -20°C.

**Regulatory Information**

- **Regulations:** Follow all of the laws and regulations in your country.

**Other Information**

- **Notice:** The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may be present unknown hazards and should be used with caution. The SDS is subject to revision as new information becomes available. The information in this SDS, to the best of our knowledge, is accurate and correct. However, TOYOBO makes no warranty and assumes no liability whatsoever in connection with any use of this information.