



**Malate dehydrogenase**  
First issue : Dec. 12, 2013  
Revised: May. 31, 2022  
SDS No:820F

## Safety Data Sheet

### 1 Product and Company Identification

Product Name	Malate dehydrogenase
Product Code	MAD-211
Supplier	
Name	TOYOBO CO., LTD.
Address	Osaka Umeda Twin Towers South, 1-13-1 Umeda Kita-ku, Osaka 530-0001, Japan
Department	Biotechnology Overseas Sales and Marketing Department
Phone	+81-6-6348-3846
Fax	+81-6-6348-3833
Recommended use and restrictions on use	diagnostic product

### 2 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

### 3 Composition/Information on Ingredients

Substance/Mixture	Mixture
Chemical Nature	Malate dehydrogenase
CAS#	9001-64-3
amounts contained	50% (W/W)
Ingredients Contributing to the Hazard	No information available.

### 4 First Aid Measures

Inhalation	Remove to fresh air. Consult a physician when unpleasantness occurs.
Skin Contact	Wash off with plenty of water. Consult a physician when inflammation on the skin occurs.
Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Ingestion	Swill plentiful amount of water or milk for immediate vomiting, consult a physician.

### 5 Fire Fighting Measures

Extinguishing Media	Water spray, dry chemical powder, or carbon dioxide etc.
Protection of Firefighters	Avoid working at leeward.



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### 6 Accidental Release Measures

Personal Precautions	Wear protective gear to avoid eye/skin contact and inhalation. Do not work at
Environmental Precautions	High concentrated waste fluid should not be directly discharged into rivers.
Methods for Cleaning up	Use cloth, paper or anything similar to soak up the solution leaking out of the container. Take up under vacuum using dust collecting filter, wash residual spill with copious amounts of water. (Waste water should be treated with activated sludge etc.)

### 7 Handling and Storage

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.
Safe Handling Advice	Wear protective gear, avoiding contact on eye, skin and clothes.
Storage	
Technical Measures	Keep sealed container in refrigerator.
Incompatible Products	None specified.
Storage Conditions	Store under -20°C.
Packaging Materials	Use the initial container of the product.

### 8 Exposure Controls/Personal Protection

Engineering Measures	Set local ventilation equipment.
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.

### 9 Physical and Chemical Properties

Physical State, form and colour	Solid, powder, light yellow
Odour	No odour
pH	In the range of 7.0-8.0 in case of 100 mg/ml in water.
Decomposition Temperature	No information available.
Flash Point	No information available.
Density	No information available.
Solubility	Freely soluble in water.



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### 10 Stability and Reactivity

#### Stability

Stable at temperatures under  $-20^{\circ}\text{C}$ . Proteins, when left for long at room temperature, might be degraded, which does not cause any hazardous reaction though.

#### Possible hazard reactions at specific condition

Not specified.

#### Conditions to avoid

Prolonged storage under higher temperature 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.

### 11 Toxicological Information

#### Acute Toxicity

Not available.

#### Local Effects

Not available.

#### Sensitization

Not available.

### 12 Ecological Information

#### Persistence/Degradability

Malate dehydrogenase decomposes and does not remain on the environment for long, since it consists of protein.

### 13 Disposal Considerations

#### Waste from Residues

Dispose of protein 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.

### 14 Transport Information

#### International Regulations

None specified (Not classified as hazardous material as per the UN recommendation).

#### Specific Precautions

Keep at temperatures under  $-20^{\circ}\text{C}$ .

### 15 Regulatory Information

#### Regulations

None specified.

### 16 Other Information

#### Notice

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