Cholesterol oxidase(COO-321)
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SDS No.1028F

Safety Data Sheet

1 Chemical Product and Company Identification

Identification of the product	**Cholesterol oxidase**
Product Code	COO-321
Supplier	
Name	TOYOBO CO.,LTD.
Address	2-8, Dojima Hama 2-chome, Kita-ku, Osaka 530-8230, Japan
Department	Biotechnology Overseas Sales and Marketing Department
Phone	+81-6-6348-3843
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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	Cholesterol oxidase
CAS#	9028-76-6
Concentration or concentration range	ca. 40% (W/W)
Stabilizer, etc	ca. 60% (W/W)
Ingredients Contributing to the Hazard	
Common Chemical name	Boric acid
Concentration or concentration range	ca 0.07% (W/W)
Chemical formula	H_3BO_3
CAS#	10043-35-3

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.

6 Accidental Release Measures

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

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.
Storage	
Technical Measures	Keep sealed container in freezer.
Incompatible substances and mixtures	None specified.
Storage Conditions	Store under -20℃ to avoid deactivating.
Packaging Materials	Use the initial container of the product.

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8 Exposure Controls/Personal Protection

Engineering Measures	Provide shower and eye washing apparatus nearby.
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	Powder
Colour/Odour	Yellow/No odour
pH	ca. pH7.0 in the case of 10 mg/ml in water.
Decomposition Temperature	No information available.
Flash Point	No information available.
Density	No information available.
Solubility	Easily soluble in water.

10 Stability and Reactivity

Stability	Stable at temperatures below -20℃. 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.

11 Toxicological Information

Acute Toxicity	No information available.
Skin corrosion/irritation	No information available.
Eye damage/irritation	No information available.
Sensitization	Might cause allergic reactions upon inhaling or skin contact because of the protein contained.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Toxic to reproduction	No information available.
Specific target organ toxicity (Single exposure)	No information available.
Specific target organ systemic (Repeated exposure)	No information available.
Aspiration toxicity	No information available.

The information on the boric acid is shown below.

Acute Toxicity (Oral)	LD_{50} 2660mg/kg (Rat)
Skin corrosion/irritation	Guinea pig skin irritation tests (exposure duration unknown) : At 24 and 72 hours, moderate irritation
Serious eye damage/irritation	Irritates the human eye (though the severity of the effects and recovery period are not presented).
Germ cell mutagenicity	in vivo: Mouse bone marrow cell mutagenicity tests (micronucleus tests): Negative in vitro: Reverse mutation test using bacteria, gene mutation test and chromosome aberration test using mammalian cultured cells: Negative
Carcinogenicity	ACGIH classified as Category A4 (as inorganic borate compounds)
Toxic to reproduction	Mouse:Reproductive Assessment by Continuous Breeding, Rat:3 generation reproductive toxicity study: Adverse effects on reproduction Rat:Developmental toxicity:Teratogenicity is observed.
Specific target organ systemic toxicity (Single exposure)	Human: Nausea, vomiting, abdominal pain and diarrhea, central nervous system depression, convulsion and respiratory irritation. Animal studies: Slight respiratory irritation was observed.
Specific target organ systemic toxicity (Repeated exposure)	Human: No information available. Animal studies:Oral administration, adverse effects were observed at over the guidance dose for category 2. Though this corresponds to "not classified" in oral route, no information of the effects via the other routes of administration.

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12 Ecological Information

Acute hazards to the aquatic environment	No information available.
Persistence /Degradability	Protein and other organic ingredients are biodegradable and does not remain on the environment for long.

13 Disposal Considerations

Waste from 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.

14 Transport Information

International Regulations	None specified (Not classified as hazardous material as per the UN recommendation).
Domestic Regulations	None specified.
Specific Precautions	Keep at temperatures below -20℃.

15 Regulatory Information

REACH(EU)	SVHC : Boric acid
Regulations	Follow all of laws and regulations in your country.

16 Other Information

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