



Choline oxidase (CHO-301)
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SDS No.860F

Safety Data Sheet

1 Chemical Product and Company Identification

Identification of the product	Choline oxidase
Product Code	CHO-301
Supplier	
Name	TOYOBO CO.,LTD.
Address	2-8, Dojimahama 2-chome Kita-ku, Osaka 530-8230, Japan
Department	Biotechnology Overseas Sales and Marketing Department
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Recommended use and restrictions on use	diagnostic product

2 Hazard Identification

Most Important Hazards and Effects	Harmful if Boric acid is swallowed.
Hazards and Effect for human health	Lethal dose (Boric acid) : Adult 10g, Child 5g

GHS classification

Physical hazards	-
Health hazards	
Acute toxicity : Oral	Category 5
Acute toxicity : Dermal	-
Acute toxicity : Inhalation (Gas,Vapour)	Not applicable
Acute toxicity : Inhalation (Dust,Mist)	-
Skin corrosion/irritation	Category 2
Serious eye damage/Eye irritation	Category 2
Sensitization : Respiratory	-
Sensitization : Skin	-
Germ cell mutagenicity	-
Carcinogenicity	-
Toxic to reproduction	Category 1B
Specific target organ toxicity (Single exposure)	Category 1(nervous system,digestive trace) Category 3(respiratory irritation)
Specific target organ toxicity (Repeated exposure)	Category 1(kidneys)
Aspiration hazard	-
Environmental hazards	
Acute hazards to the aquatic environment	-
Long-term hazards to the aquatic	-
Hazard to the ozone layer	-
	-:Classification not possible

GHS Label Elements

Symbol/Pictograms



Signal word	Danger
Hazard statements	Harmful if swallowed. Cause skin irritation. Causes serious eye irritation. Damage fertility or the unborn child Causes damage to organs (Nervous system, digestive organ, respiratory organ). May cause respiratory irritation. Cause harm to kidneys through prolonged or repeated exposure.

Instructions

Precaution Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.

Use only outdoors or in a well-ventilated area.
Wear protective gloves/eye protection/face protection.
Do not breathe dust/fume.

Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
First-aid measures IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If on skin: Take off immediately all contaminated clothing. Rinse skin with water /shower.
If skin irritation occurs: Get medical advice/attention.
If in eye: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice /attention.
IF exposed or concerned: Get medical attention/advice.
Get medical advice/attentions if you feel unwell.

Storage Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Disposal Dispose of contents/container in accordance with local/regional/national/international/regulation.
Symptoms of vomit, diarrhea, collapse, erythema may appear after 2-3 hours later and die after 3-5 days later from ingestion.

Important symptoms (Boric acid)

3 Composition/Information on Ingredients

Substance/Mixture	Mixture
Chemical Nature	Choline oxidase
Chemical specificity	Freeze and drying powder including enzyme
Amounts contained	ca 60%(W/W)
	CAS#
Cholesterol esterase	9028-67-5
Boric acid	10043-35-3
Ingredients Contributing to the Hazard	
Common Chemical name	Boric acid
Amounts contained	ca 20%(W/W)
Chemical formula	H ₃ BO 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.
Eye Contact	Rinse off with running water for several minutes. Consult a physician afterwards.
Ingestion	Rinse mouth. Swill plentiful amount of water or milk for immediate vomiting. Consult a physician.
Most important symptoms/effects, acute and delayed.	Inhalation: Cough, Sore throat Skin: Redness Eyes: Redness, Pain Ingestion: Abdominal pain. Convulsions. Diarrhoea. Nausea. Vomiting. Skin rash.

5 Fire Fighting Measures

Extinguishing Media	Water spray, dry chemical powder, or carbon dioxide etc.
Particular hazardous	Firefighter should work from the windward side.

6 Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedure

Environmental Precautions

Methods and materials for containment and cleaning up

Wear proper protective gear to avoid eye/skin contact and inhalation. Work from the windward side.

Do not wash away into sewer, watercourse or river.

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.

(Waste water should be treated with activated sludge or adsorbed with activated carbon etc.)

7 Handling and Storage

Handling

Technical Measures

Precautions

Storage

Technical Measures

Incompatible substances and mixtures

Packaging Materials

Wear protective gear to avoid eye/skin contact and inhalation.

Do not drop the container to prevent the content popping out.

Keep sealed container in freezer.

Store under -20°C to avoid deactivating.

None specified.

Use the initial container of the product.

8 Exposure Controls/Personal Protection

Engineering controls

Occupational exposure limit, biological limit

Personal Protective Equipment

Respiratory Protection

Hand Protection

Eye Protection

Skin and Body Protection

Provide shower and eye washing apparatus nearby.

(Boric acid) TLV: TWA 2mg/m³, STEL 6mg/m³

Protecting mask

Protecting gloves

Safety goggles

Long sleeve working wear

9 Physical and Chemical Properties

Physical State, form and colour

Odour

pH

Flash Point

Explosiveness

Density

Solubility

Powder / Yellow

No odour

ca pH7.5 (1% W/V)

No information available.

No information available.

No information available.

Freely soluble in water.

10 Stability and Reactivity

Stability

Possible hazard reactions at specific condition

Conditions to avoid

Materials to avoid

Hazardous Decomposition Products

Stable at temperatures below -20°C. When left for long at room temperature, proteins might be degraded, which does not cause any hazardous reaction.

Prolonged storage under higher temperature than room temperature and high humidity.

Oxidizing agent

No information available.

11 Toxicological Information

Acute Toxicity (Oral)

Skin corrosion/irritation

Serious eye damage/irritation

Toxic to reproduction

Specific target organ systemic toxicity (Single exposure)

Specific target organ systemic toxicity (Repeated exposure)

Aspiration hazard

Boric acid

LD₅₀ 2660mg/kg (Rat)

May cause rubefaction.

May cause pain.

May affect reproduction.

This product may irritate eye, skin, respiratory tract and may damage to digestive tract, livers, kidneys.

This product may causes dermatitis through repeated contact.

Cough, sore throat.

12 Ecological Information

Aquatic environmental toxicity
Persistence/Degradability

No information available.

No data, but it's considered to decomposes and does not remain on the environment for long, since it consists of protein.

13 Disposal Considerations

Residues

Dispose in accordance with local regulations. Consign a qualified industrial waste treatment firm.

A pollution container and packing

Wash with copious amounts of water and waste conforming to local regulations depending on the type of the

14 Transport Information

International regulations

Not applicable

Domestic regulations

Not applicable

Specific precautions transport measures and conditions

Avoid direct sunshine and check the container and loading to prevent leakage or turnover, fall and damage. Transport in accordance with regulations. Do not load with foods and feed. Keep at temperatures below -20°C.

15 Regulatory Information

Registration, Evaluation, Authorization and Restriction of Chemicals (EU)

The following ingredient is included in SVHC (Candidate list of authorization).

Common Chemical name

Boric acid

Amounts contained

ca 17% (W/W)

Chemical formula

H₃BO₃

CAS#

10043-35-3

16 Other Information

Notice

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