1 Chemical Product and Company Identification

Identification of the product

Choline oxidase

Product Code

CHO-301

Supplier

TOYOBO CO., LTD.

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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.

Hazardous and Effect for human health

Lethal dose (Boric acid): Adult 10g, Child 5g

GHS classification

Physical hazards

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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

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Sensitization: Skin

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Germ cell mutagenicity

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Carcinogenicity

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Toxic to reproduction Category 1B

Specific target organ toxicity

Category 1 (nervous system, digestive trace)

Category 3 (respiratory irritation)

Specific target organ toxicity

Category 1 (kidneys)

(Repeated exposure)

Aspiration hazard

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Environmental hazards

Acute hazards to the aquatic environment

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Long-term hazards to the aquatic

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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 advice/attention 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.

Important symptoms (Boric acid)
Symptoms of vomit, diarrhoea, collapse, erythema may appear after 2-3 hours later and die after 3-5 days later from ingestion.

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# 10043-35-3
Cholesterol esterase
CAS# 9028-67-5
Boric acid
CAS# 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
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.
Accidental Release Measures

Personal Precautions, protective equipment, and emergency procedure
Environmental Precautions
Methods and materials for containment and cleaning up

Handling and Storage

Handling
Technical Measures
Precautions

Storage
Technical Measures
Incompatible substances and mixtures
Packaging Materials

Exposure Controls/Personal Protection

Engineering controls
Occupational exposure limit, biological limit
Personal Protective Equipment
Respiratory Protection
Hand Protection
Eye Protection
Skin and Body Protection

Physical and Chemical Properties

Physical State, form and colour
Odour
pH
Flash Point
Explosiveness
Density
Solubility

Stability and Reactivity

Stability
Possible hazard reactions at specific condition
Conditions to avoid

Materials to avoid
Hazardous Decomposition Products

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

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.)

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.

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

Powder / Yellow
No odour
ca pH7.5 (1% W/V)
No information available.
No information available.
No information available.
Freely soluble in water.

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.

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
A pollution container and packing
Dispose in accordance with local regulations. Consign a qualified industrial waste treatment firm.
Wash with copious amounts of water and waste conforming to local regulations depending on the type of the material.

14 Transport Information
International regulations
Domestic regulations
Specific precautions transport measures and conditions
Not applicable
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)
Common Chemical name
Boric acid
Amounts contained
ca 17% (W/W)
Chemical formula
H₃BO₃
CAS#
10043-35-3
The following ingredient is included in SVHC (Candidate list of authorization).

16 Other Information
Notice
The contents specified here is made based on the documents, information or data which are currently available and subject to revision in the future. TOYOBO makes no warranty and assumes no liability whatsoever in connection with any use of this information.