

Product Name : Uricase (UA0-201)
 First issue : Oct. 1.2014
 Revised: Apr. 1. 2021
 SDS No 937F



Safety Data Sheet

1 Chemical Product and Company Identification

| | |
|---|--|
| Identification of the product | Uricase |
| Product Code | UA0-201 |
| Supplier | |
| Name | TOYOBO CO.,LTD. |
| Address | 2-8, Dojimahama 2-chome Kita-ku, Osaka 530-8230, Japan |
| Department | Biotechnology Overseas Sales and Marketing Department |
| Phone | +81-6-6348-3843 |
| Fax | +81-6-6348-3833 |
| Recommended use and restrictions on use | diagnostic product |

2 Hazard Identification

Important hazards Harmful if Boric acid or Sodium tetraborate are swallowed.

Adverse effects on 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) | - |
| Acute toxicity : Inhalation (Dust, Mist) | - |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/Eye irritation | Category 2A |
| Sensitization : Respiratory | - |
| Sensitization : Skin | - |
| Germ cell mutagenicity | - |
| Carcinogenicity | - |
| Toxic to reproduction | Category 2 |
| Specific target organ toxicity (Single exposure) | Category 1(nervous system, gastrointestinal tract, respiratory organ, kidneys) |
| Specific target organ toxicity (Repeated exposure) | Category 1(nervous system, gastrointestinal tract, respiratory organ, kidneys) Category 2(testis) |
| Aspiration hazard | - |
| Environmental hazards | |
| Acute hazards to the aquatic environment | - |
| Long-term hazards to the aquatic environment | - |
| Hazard to the ozone layer | - |

--Classification not possible

GHS Label Elements

Symbol/Pictograms



Signal word

Danger

Hazard statements

May be harmful if swallowed.
 May cause skin irritation.
 May cause serious eye irritation.
 May damage fertility or the unborn child.
 Cause damage to nervous system, gastrointestinal tract,
 respiratory organ and kidneys.
 Cause damage to nervous system, gastrointestinal tract,
 respiratory organ, kidneys through prolonged or repeated
 exposure.

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| Precautionary statements | <p>May cause damage to testis through prolonged or repeated exposure.</p> |
| Prevention | <p>Obtain special instructions before use.</p> <p>Do not handle until all safety precautions have been read and understood.</p> <p>Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>Do not breathe dust/fume.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p> |
| Response | <p>Get medical advice/attentions if you feel unwell.</p> <p>If ON SKIN: Wash with plenty of water/soap. Take off contaminated clothing and wash it before use.</p> <p>If skin irritation occurs: Get medical advice/attention.</p> <p>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.</p> <p>If exposed or concerned: Get medical attention/advice.</p> |
| Storage | <p>Store locked up.</p> <p>Store in a well-ventilated place. Keep container tightly closed.</p> |
| Disposal | <p>Dispose of contents/container in accordance with local/regional/national/international/regulation.</p> |
| Important symptoms (Boric acid) | <p>Symptoms of vomit, diarrhea, collapse, erythema may appear after 2-3 hours later and die after 3-5 days later from ingestion.</p> |

3 Composition/Information on Ingredients

| | |
|--|--|
| Substance/Mixture | Mixture |
| Chemical Nature | Uricase |
| Chemical specificity | Freeze and drying powder including enzyme |
| Concentration or concentration range | ca. 31 % (W/W) |
| Main components | CAS # |
| Uricase | 9002-12-4 |
| Boric acid | 10043-35-3 |
| Sodium tetraborate decaydrate | 1303-96-4 |
| Ingredients Contributing to the Hazard | |
| Common Chemical name | Boric acid |
| Chemical formula | H ₃ BO ₃ |
| CAS# | 10043-35-3 |
| Common Chemical name | Sodium tetraborate decahydrate |
| Chemical formula | Na ₂ B ₄ O ₇ · 10H ₂ O |
| CAS# | 1303-96-4 |
| Boron content of this product | ca. 15 % (W/W) |

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4 First Aid Measures

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|---|--|
| 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 | Rinse mouth. Swill plentiful amount of water or milk for immediate vomiting. Consult a physician. |
| Most important symptoms/effects, acute and delayed. | Inhalation: cough, pant, pharyngeal pain, nosebleed. Skin: dry skin. Eye: redness, pain Ingestion: stomachache, derangement, diarrhea, headache, nausea, vomit, lassitude, cramp. |
| Protection for first-aides | Protector should wear appropriate wear. |
| Special notes for doctors | Need a rest and medical follow up. |

5 Fire Fighting Measures

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| Specific extinguishing methods | Water spray, dry chemical powder, or carbon dioxide etc. |
| Precautions for fire-fighters | Firefighter should work from the windward side. |

6 Accidental Release Measures

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|---|--|
| Personal Precautions, protective equipment and emergency procedure. | 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 and materials for containment and 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. (Waste water should be treated with activated sludge or adsorbed with activated carbon etc.) |

7 Handling and Storage

| | |
|--------------------------------------|---|
| Handling | |
| Technical Measures | Wear protective gear to avoid eye/skin contact and inhalation. |
| Precautions | Do not drop the container to prevent the content popping out. |
| Safe Handling Advice | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gear, avoiding contact on eye, skin and cloths. Ventilate a room to keep air under permissible exposure limit. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. |
| Storage | |
| Technical Measures | Keep sealed container in freezer. |
| Incompatible substances and mixtures | None specified. |
| Storage Conditions | Store under -20°C to avoid deactivating. |
| Packaging Materials | Use the initial container of the product. |

8 Exposure Controls/Personal Protection

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|---|---|
| Engineering controls | Provide shower and eye washing apparatus nearby. |
| Occupational exposure limit, biological limit | TLV: TWA 2mg/m ³ , STEL 6mg/m ³ |
| Personal Protective Equipment | |
| Respiratory Protection | Protecting mask |
| Hand Protection | Protecting gloves |
| Eye Protection | Safety goggles |
| Skin and Body Protection | Long sleeve working wear |

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9 Physical and Chemical Properties

| | |
|--------------------------------|---------------------------|
| Physical State, form and color | Powder / White |
| Odour | No odour |
| pH | ca. pH 8.5 (1% W/V) |
| Flash Point | No information available. |
| Explosiveness | No information available. |
| Density | No information available. |
| Solubility | Freely soluble in water. |

10 Stability and Reactivity

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|---|--|
| 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 | |
| Conditions to avoid | Prolonged storage under higher temperature than room temperature and high humidity. |
| Materials to avoid | Oxidizing agent |
| Hazardous Decomposition Products | No information available. |

11 Toxicological Information

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|--|---|
| (1) Boric acid | |
| Acute Toxicity (Oral) | Rat LD ₅₀ 2660mg/kg |
| Skin corrosion/irritation | Moderate irritation (guinea pig, 24hr, 72hr) |
| Serious eye damage/irritation | Rubefaction /Pain |
| Sensitization | No data available |
| Germ cell mutagenicity | Absence of data on multi-generation mutagenicity tests and germ cell mutagenicity tests in vivo, and negative data on somatic cell mutagenicity tests in vivo (micronucleus tests) |
| Carcinogenicity | ACGIH (2005): Category A4 |
| Toxic to reproduction | Adverse effects on reproduction of parental animals and development of pups at doses producing no parental toxicity. |
| Specific target organ toxicity (Single exposure) | Human:Gastrointestinal tract effects such as nausea, vomiting, abdominal pain and diarrhea, and central nerve effects such as lethargy, headaches, fever, increased irritability and muscle convulsion. Irritation of the upper respiratory tract. Animal:cyanosis, tetany, spasm and shock-like symptoms at dosing levels within the guidance value ranges for Category 1. |
| Specific target organ toxicity (Repeated exposure) | Human:oliguresis, anuria, and nephropathy including renal tubular necrosis. |
| (2) Sodium tetraborate | |
| Acute Toxicity (Oral) | LD ₅₀ 4450mg/kg (Category 5) (EHC204) 3493mg/kg, 4500mg/kg, 4980mg/kg, 5660mg/kg, 6080mg/kg (ECETOC TR63) 6000mg/kg |
| Acute Toxicity (Dermal) | LD ₅₀ > 10000mg/kg (HSDB) (Category 4) |
| Skin corrosion/irritation | May cause dermatitis (Category 2) |
| Serious eye damage/irritation | May cause strong eye irritation (Category 2A) |
| Toxic to reproduction | Affect spermatogenesis (Category 2). May damage fertility or the unborn child. |
| Specific target organ toxicity (Single exposure) | This product causes damage to the nervous system, respiratory organ, kidneys. (Category 1) |
| Specific target organ toxicity (Repeated exposure) | This product causes damage to the nervous system, respiratory organ, kidneys and testis, through prolonged or repeated exposure. (Category 2) |
| Aspiration hazard | Not classification |

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12 Ecological Information

Acute hazards to the aquatic environment
 Persistence /Degradability

Polyethylene Glycol-p-octylphenyl Ether (Triton X-100)
 LC50/96hr = 3mg/L (bluegill)
 This product is biodegradable and does not remain on the environment for long.
 22% by BOD (National Institute of Technology and Evaluation, Japan)

13 Disposal Considerations

Residues

Dispose of in accordance with all applicable local and national laws and regulations.

A pollution container and packing

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

14 Transport Information

International regulations

IMO information

Not applicable

IATA information

Not applicable

Domestic regulations

Rail and road transportation information

Not applicable

Marine transportation information

Not applicable

Aviation transportation information

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) Following components of this product are included in SVHC (Candidate list of authorization).

Common Chemical name

Boric acid

Chemical formula

H₃BO₃

CAS#

10043-35-3

Common Chemical name

Sodium tetraborate

Chemical formula

Na₂B₄O₇ · 10H₂O

CAS#

1303-96-4

Boron content of this product

ca. 11 % (W/W)

16 Other Information

Notice

The information shall not be taken as being all inclusive and is to be used only 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.