



Safety Data Sheet

1 Chemical Product and Company Identification

Identification of the product	Protocatechuate 3,4-dioxygenase
Product Code	PCO-302
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

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	Protocatechuate 3,4-dioxygenase
Chemical specificity	Freeze and drying powder including enzyme
CAS#	9029-47-4
Concentration or concentration range	ca. 32 % (W/W)
Stabilizers, etc.	ca. 68 % (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

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

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.)



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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.

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.

8 Exposure Controls/Personal Protection

Engineering controls

Provide shower and eye washing apparatus nearby.

Occupational exposure limit, biological limit

Not applicable.

Personal Protective Equipment

Respiratory Protection

Protecting mask

Hand Protection

Protecting gloves

Eye Protection

Safety goggles

Skin and Body Protection

Long sleeve working wear

9 Physical and Chemical Properties

Physical State, form and color

Powder / Light brown

Odour

No odour

pH

ca. pH 7.5 (1% W/V)

Flash Point

No information available.

Explosiveness

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

Conditions to avoid

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

Materials to avoid

May react with strong oxidizing compound.

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

No information available.

(Single exposure)

Specific target organ systemic toxicity

No information available.

(Repeated exposure)

Aspiration toxicity

No information available.



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12 Ecological Information

Acute hazards to the aquatic environment
Persistence /Degradability

No information available.

Protein and other organic ingredients are biodegradable and does not remain on the environment for long.

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 .

15 Regulatory Information

Regulations

Follow all of the laws and regulations in your country.

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.