

ENZYME MATERIAL SAFETY DATA SHEET

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1. IDENTIFICATION OF THE PREPARATION AND OF THE COMPANY

Commercial Product Name: Hemicellulase "Amano" 90
Description: Powdered enzyme preparation
Manufacturer: AMANO ENZYME INC.
2-7,1-Chome, Nishiki, Naka-ku, Nagoya 460-8630, JAPAN
Emergency Phone Number: Japan (Head Office); +81-(0)-52-211-3032
USA; +1-847-649-0101/(800-446-7652)
Europe; +44-(0)-1608-644677

2. INFORMATION ON INGREDIENTS

Chemical Characterization of Active Component: Enzyme protein
Synonymis: Endo-1,4- β -xylanase
IUB number: 3.2.1.8
CAS number: 9025-57-4
EINECS number: 232-800-2
Classification of Preparation: Xn (harmful), R42
Exposure limit: Not established (TLV: Not established)

3. HAZARDS IDENTIFICATION

Repeated inhalation of enzyme dust may induce sensitization and may cause allergic type reactions in sensitized individuals. Skin contact may cause an irritation.

OSHA permissible Exposure Limit, ACGIH Threshold Limit Value, Carcinogen-NTP Program and Carcinogen-IARC Program are not available

4. FIRST AID MEASURES

Skin Contact: Wash skin with plenty of water.
Eye Contact: Rinse eyes with plenty of water.
Ingestion: Rinse mouth and throat thoroughly with water. Drink water. Should irritation occur, seek medical advice.
Inhalation: Remove from exposure. If symptoms of irritation or sensitization occur (shortness of breath, wheezing or labored coughing), seek medical advice.

5. FIRE-FIGHTING MEASURES

Protection against Fire and Explosions: No special requirements
Suitable Fire Extinguish Media: Water, foam
Non Suitable Media: None
Special Exposure Hazards: None
Flash point, Flammable limits and Auto Ignition Temperature are not applicable.

6. ACCIDENTAL RELEASE MEASURES

Spilled preparation should be removed immediately. Avoid formation of dust. Take up by mechanical means preferably by a vacuum cleaner equipped with a high efficiency filter. Flush remainder carefully to drain using copious amounts of water. Avoid splashing and high pressure washing (avoid formation of aerosols). Ensure sufficient ventilation. Wash contaminated clothing. Dispose of the cleaner bag according to item 13. If cleaner has no bag, dispose of contents using full protection, see item 8 and according to item 13.

7. HANDLING AND STORAGE

Avoid formation of dust. Avoid splashing and high pressure washing. Ensure good ventilation of the room, when handling this preparation. Store container in a cool and dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Recommended Personal Protective Equipment

Respiratory Protection: Respirator approved for this type of dust and potential airborne concentrations, such as full face mask

Hand protection: Impermeable gloves, such as latex gloves

Eye Protection: Protecting glasses or eye shield

Other Protection: Overall or other normal workwear

9. PHYSICAL AND REACTIVITY

Appearance: Off white to brown powder

Odor: Slight odor

pH: Not applicable

Solubility in water: Soluble

Explosive properties: Not established

Others: Boiling Point, Vapor Pressure, Vapor Density, Specific Gravity, Percent Volatile by Volume and Evaporation Ratio are not available.

10. STABILITY AND REACTIVITY

This material is stable under normal conditions of use.

Conditions to Avoid: None

Materials to Avoid: None

Hazardous Decomposition Products: None

Hazardous Polymerization: Not occur

11. TOXICOLOGICAL INFORMATION

Inhalation of aerosols or dust resulting from inappropriate handling may induce sensitization and may cause allergic reactions in sensitized individuals. Skin contact may cause an irritation. The preparation is non-toxic and ingestion of small quantities is not considered a hazard, but see item 4

12. ECOLOGICAL INFORMATION

The preparation is biodegradable. Not harmful to aquatic and marine organisms when dissolved with copious amounts of water. See item 6.

13. DISPOSAL CONSIDERATIONS

No special disposal method required, except that in accordance with current local authority regulations. In case of spillage, carefully collect and dissolve in water before disposal. See item 6

14. TRANSPORT INFORMATION

UN No:	Not applicable	Sea:	Not applicable
Road/Rail:	Not applicable	Air:	Not applicable

15. REGULATORY INFORMATION

The preparation does not contain ingredients listed as dangerous substances in Annex I of the EEC Directive 67/548. However, it is a dangerous preparation within the meaning of EEC regulation (88/379)

Labeling: Xn (harmful)

R-42: May cause sensitization by inhalation

S-22/S-23: Do not breathe dust/spray

16. OTHER INFORMATION

The information contained in this Enzyme Material Safety Data Sheet, as of the issue date, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty or guarantee.

Since the conditions of use are beyond the control of our company, it is the responsibility of the user to determine the conditions of safe use of this preparation. The information in this sheet does not represent analytical specifications, for which please refer to our Specification.

The format of this enzyme Material Safety Data Sheet complies with the EEC Directive 91/55/EEC and is recommended by the Association of Manufactures of Fermentation Enzyme Products "AMFEP".