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SAFETY DATA SHEET

1. Identification of the Substance / Preparation and Company

Klenzyme® (Registered Trademark in US and Canada)

Product No. 1673

MSDS No. 1673

NFPA 704 HAZARD RATING:

HEALTH: 1
FIRE: 0
REACTIVITY: 0

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2. Composition/Information on Ingredients

Hazardous Component(s)	EEC No.	CAS No.	% By Wt.	Symbol	R Phrases
Subtilisins (Proteolytic enzymes)	232-752-2	8014-01-1	<5	X _n , X _n	37,38, 41, 42
Sodium tetraborate, decahydrate	NA	1303-96-4	<5	NA	NA
Triethanolamine	NA	102-71-6	<15	[X]	[36]

3. Hazards Identification

May cause skin irritation. Risk of serious damage to eyes.

4. First Aid Measures

Eye Contact: Flush eyes immediately with water for at least 15 minutes. Get medical attention.

Skin Contact: Flush skin immediately with water for at least 15 minutes. Get medical attention if irritation persists.

Inhalation: Remove patient to fresh air. If not breathing, give artificial respiration. Get medical attention.

Ingestion: Do not induce vomiting. Get medical attention. Do not give anything by mouth to an unconscious person. If conscious, drink a large quantity of milk or water.

5. Fire-Fighting Measures

Flash Point: NA

Special Hazards: None known.

Extinguishing Media: Suitable for surrounding fire.

Special Fire Fighting Procedures: None known.

6. Accidental Release Measures

Spills may be picked up with a mop and followed by a water rinse. Small spills may be flushed to a sanitary sewer with copious amounts of water if in accordance with National and local regulations.

7. Handling and Storage

7.1 Handling

Wash hands thoroughly after use.

7.2 Storage

Avoid exposure to high temperature or humidity. Keep container closed when not in use.

8. Exposure Control/Personal Protection

8.1 Occupational Exposure Limits

Triethanolamine: ACGIH TLV = 5 mg/m³; Subtilisins: ACGIH TLV = 0.06 ppb (protease as dust)

8.2 Personal Protection

Respirator Protection: Not required for normal use. If product is applied by means of spraying and ventilation is not sufficient to maintain levels below exposure limits, a NIOSH N95 is the minimum required respirator type.

Eye Protection: Safety glasses.

Protective Gloves: Rubber.

Other Protective Clothing and Equipment: Clothes sufficient to avoid contact.

Ventilation: Adequate to maintain levels below exposure limits.

9. Physical and Chemical Properties

Solubility in Water: Complete **Specific Gravity:** Approximately 1.086

Appearance/Odor: Amber liquid/spicy floral fragrance. pH: Approximately 7.5 – 8.0

10. Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur.

Incompatible Materials: Strong oxidizers.

Conditions to Avoid: Heat and light.

Hazardous Decomposition or Byproducts: aldehydes, CO and CO₂ in fire situations.

11. Toxicological Information

11.1 Acute (Primary Routes of Exposure)

Eyes: Upon contact, mildly irritating to eyes.

Skin: Prolonged or repeated contact may irritate skin. Not a skin sensitizer.

Inhalation: Subtilisins in dust form may result in sensitization as respiratory irritation, coughing and/or difficulty in breathing. If product is applied by means of spraying, the potential for similar sensitization cannot be ruled out

Ingestion: May cause upset to gastrointestinal tract.

11.2 Long Term Exposure

Animal ingestion studies in several species, at high doses, indicate that borates cause reproductive and developmental effects. A human study of occupational exposure to borate dust showed no adverse effect on reproduction.

Carcinogenicity: IARC, NTP and OSHA do not list this product or its ingredients as carcinogens.

12. Ecological Information: Product is ready biodegradable as per OECD Method 301B.

13. Disposal Considerations

Dispose in accordance with local, state, and Federal regulations. Empty containers should be rinsed and discarded in a waste container or offered for recycling if possible. Do not use empty containers for other purposes.

14. Transport Information

Ground: Non-hazardous

Sea: IMDG Class: Non-hazardous

Air: ICAO/IATA Class: Non-hazardous

15. Regulatory Information

EEC Classification: IRRITANT

Hazard Symbol: Xi

Risk Phrases: R38: Irritating to skin. R41: Risk of serious damage to eyes.

Safety Phrases: S24: Avoid contact with skin. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

S2: Keep out of reach of children

USA State Regulations: May contain trace levels of ethylene oxide and propylene oxide.

WHMIS Classification: D2 – Materials Causing Other Toxic Effects (Irritant)

16. Other Information

The information on this sheet is not a specification and does not guarantee specific properties. The information is intended to provide general knowledge as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instructions or recommendations are not followed.

NA - Not Applicable

ND - No Data