

SAFETY DATA SHEET



First you add knowledge...

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Avizyme® 1502
Material Number 150M
Chemical nature Enzyme Preparation.
Formula Not applicable.
Synonyms Not applicable.
Recommended Use Animal feed
Company/undertaking identification: Danisco Animal Nutrition
PO Box 777
Marlborough
Wiltshire SN81XN
United Kingdom
Tel: +441672 517777
Fax: +441672 517778
E-mail Address SDS.Genencor@Danisco.com
Emergency telephone: +1 (319) 368-7657

2. HAZARDS IDENTIFICATION

Potential Health Effects: Inhalation of enzyme mist/dust may cause allergic respiratory reactions, including asthma, in susceptible individuals on repeated exposure.

Eyes May cause slight irritation.
Skin May cause slight irritation.
Inhalation: May cause slight irritation.
Ingestion Not expected to be toxic by ingestion.

Aggravated Medical Conditions Atopy. Asthma.

Environmental Hazard See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Description Enzyme Preparation.

Chemical Name	CAS-No	%	OSHA	ACGIH
Alpha Amylase (Bacterial)	9000-90-2	<1	Not Listed	Not Listed
Subtilisins (proteolytic enzymes)	9014-01-1	<1	Not Listed	0.00006 mg/m ³ Ceiling
Xylanase	9025-57-4	<1	Not Listed	Not Listed
Wheat flour	130498-22-5	Proprietary	Not Listed	Not Listed

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4. FIRST AID MEASURES

Eye Contact	Flush eyes with water at least 15 minutes. Get medical attention if eye irritation develops or persists.
Skin Contact	Flush skin with large amounts of water. If irritation develops and persists, get medical attention.
Inhalation	Remove person to fresh air. If signs/symptoms continue, get medical attention.
Ingestion	Rinse mouth with water. Get medical attention immediately if symptoms occur.
Notes to Physician	May cause allergic respiratory reaction.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Not flammable.
Suitable Extinguishing Media	Standard procedure for chemical fires. Foam. Water.
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use only with adequate ventilation/personal protection. Avoid breathing dust or spray mist. Avoid formation of dust and aerosols. For personal protection see section 8.
Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	Contain and remove spilled product by mechanical means or with a vacuum cleaner equipped with a high efficiency filter. Avoid formation of aerosol.

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7. HANDLING AND STORAGE

Handling Avoid breathing vapors or mists. Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice. For personal protection see section 8.

Storage Keep container tightly closed in a dry and well-ventilated place. Additional information available from product literature.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	CAS-No	ACGIH TLV	OSHA 8 Hr. TWA:
Subtilisins (proteolytic enzymes)	9014-01-1	Ceiling: 0.00006 mg/m ³	

Occupational Exposure Controls

Engineering Measures Ventilation systems.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Personal Protective Equipment

Eye/Face Protection Safety glasses with side-shields.

Skin and Body Protection Impervious gloves.

Respiratory Protection Use NIOSH approved respiratory protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Light brown	Odor	Typical odor of fermented product
Physical State	Granules	pH	Not applicable.
Flash Point	Not applicable.	Autoignition Temperature	Not applicable.
Decomposition Temperature	Not determined	Boiling Point/Range	Not determined
Melting Point/Range	Not determined	Freezing Point	Not determined
Flammability Limits in Air	Not applicable.	Explosion Limits	Not determined
Specific Gravity	0.75	Water solubility	Soluble
Evaporation Rate	Not determined	Vapor Pressure	Not determined
Vapor Density	Not determined	Density	Not determined

Avizyme® 1502**Material Number 150M****10. STABILITY AND REACTIVITY**

Stability	Stable under normal conditions.
Incompatible Products	None known.
Conditions to Avoid	None known.
Hazardous Decomposition Products	None known.
Hazardous Polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION**Product Information****Acute Toxicity**

Oral	No data available
Dermal	No data available
Inhalation	No data available

Irritation

Eye irritation	No data available
Skin irritation	May cause irritation
Respiratory irritation	No data available

Sensitization

Inhalation of enzyme mist/dust may cause allergic respiratory reactions, including asthma, in susceptible individuals on repeated exposure.

Systemic toxicity

No data available

Mutagenic effects

No data available

Reproductive effects

This product does not contain any known or suspected reproductive hazards.

Carcinogenicity

Not classified as a carcinogen by IARC, OSHA, or NTP.

Component Information

Component information below is as complete as possible. Any fields not shown indicate no data is presently available.

Alpha Amylase (Bacterial)

Oral	LD50/oral/rat 2000 mg/kg
Inhalation	Single dose rat LC50 3.9 mg/l
Eye irritation	Not an irritant.
Skin irritation	Not an irritant.

Systemic toxicity

In a 90-day study with rats, the NOEL was found to be 1000 ppm. In a 14-day feeding study with rats, a NOAEL was established at 5,000 ppm. Data from similar enzyme.

Avizyme® 1502**Material Number 150M****11. TOXICOLOGICAL INFORMATION**

Mutagenic effects Negative in Ames assay with and without metabolic activation up to 5000 ug/plate. Negative in chromosome aberration using human lymphocytes with and without metabolic activation up to 5000 ug/ml. Data from similar enzyme.

Subtilisins (proteolytic enzymes)**Acute Toxicity**

Oral LD50/oral/rat > 2000 mg/kg
Dermal LD50/dermal/rabbit > 2 ml/kg.
Inhalation LC50/inhalation/4h/rat 0.8 mg/l

Irritation

Eye irritation Contact with eyes may cause irritation.
Skin irritation May cause skin irritation.
Respiratory irritation No data available

Sensitization

Patch test on human volunteers did not demonstrate sensitization properties.

Systemic toxicity

No data available

Mutagenic effects

Negative in chromosomal aberration using human lymphocytes. Negative in Ames assay with and without metabolic activation up to 5000 ug/plate.

Reproductive effects

Not expected to produce reproductive or developmental toxicity.

Carcinogenicity

Not classified as a carcinogen by IARC, OSHA, or NTP.

Xylanase

Oral No data available
Dermal No data available
Inhalation LC50/inhalation/4h/rat > 5.1 mg/l
Eye irritation No data available
Skin irritation No data available

Sensitization

May cause sensitization by inhalation

Systemic toxicity

In a 91-day feeding study in rats, the NOAEL can be established at > 37,500 U/kg/day.

Mutagenic effects

Negative in Ames assay up to 5000 ug/plate. Negative in chromosome aberration studies using Chinese hamster ovary cells.

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12. ECOLOGICAL INFORMATION

Ecotoxicity effects Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Mobility Soluble.

Persistence and Degradability Enzymes are considered readily biodegradable.

Bioaccumulation/Accumulation Component Information Bioaccumulation is unlikely.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia	Biodegradation
Subtilisins (proteolytic enzymes)	NOEC: 0.63 mg protein/l (48 h) Selenastrum capricornutum	LC50: 16 mg/L(96 h) Rainbow trout	NOEC: 0,5 mg protein/l (48 h)	Average degradation was 55-79% over the test period. Data from similar enzyme.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods In accordance with local and national regulations.

Packaging If empty container retains product residues, all label precautions must be observed. Store away from ignition sources. Transport with all closures in place. Return for reuse or dispose according to national or local regulations.

14. TRANSPORT INFORMATION

Harmonized Tariff Code: 3507.90.7000 (for enzymes).

DEPT. OF TRANSPORTATION UN OR NA NUMBER Not classified as dangerous in the meaning of transport regulations.

Hazard Class Not hazardous

Packing Group Not applicable

Reportable Quantity (RQ) Not applicable

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15. REGULATORY INFORMATION

HAZARD RATING SYSTEMS:**HMIS (SCALE 0-4, WHERE 4=SEVERE HAZARD):** Health: 2 Flammability: 1 Reactivity: 0**U.S. Federal Regulations**

Chemical Name	SARA 313 - Threshold Values %	CERCLA/SARA - Section 302 Extremely Haz
Alpha Amylase (Bacterial)	Not listed	Not listed
Subtilisins (proteolytic enzymes)	Not listed	Not listed
Xylanase	Not listed	Not listed
Wheat flour	Not listed	Not listed

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

16. OTHER INFORMATION

Prepared By M. Laura
SDS Coordinator**Revision Date** 06/25/2009**Changes since last date of revision:** None.**Disclaimer**

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

END OF SDS