

# MATERIAL SAFETY DATA SHEET

## Maltase (alpha-Glucosidase)

### Section 1: Product and Company Identification

<b>Material name</b>	<b>Maltase (alpha-Glucosidase)</b>	
<b>Synonyms</b>	Maltase	
<b>Product No.</b>	70-1235-01; MALT-70-1235	
<b>Product description</b>	Lyophilized powder containing enzyme (protein), buffering salt and bovine serum albumin.	
<b>Product use</b>	Enzyme reagent for laboratory use.	
<b>Emergency Telephone Numbers</b>	<b>Distributor</b>	<b>Corporate Headquarters/Distributor</b>
Americas: +1-760-476-3962	Sekisui Diagnostics (UK) Ltd	Sekisui Diagnostics LLC
Europe, Middle East	50 Gibson Drive	31 New York Avenue
& Africa: +1-760-476-3961	Kings Hill, West Malling	Framingham, MA 01701
Asia Pacific: +1-760-476-3960	Kent ME19 4AF UK	USA
Access code: 333512	Phone: 44 (0) 1732 220022	Phone: 508-661-1835

### Section 2: Hazards Identification

<b>Emergency overview</b>	The chemical, physical and toxicological properties of this preparation, pertaining directly to occupational exposures, have not been thoroughly characterized.
<b>OSHA regulatory status</b>	This preparation is classified as hazardous under U.S. OSHA 29 CFR 1910.1200; E.C. Directive 1999/45/EC; Canadian R.S. 1985, c. H-3; U.K. CHIP 2002 No. 1689; and/or U.N. GHS ST/SG/AC 10/30. Refer to Sec. 15, Regulatory Information, for details regarding hazard classification.
<b>Precautionary statements</b>	None of the components present in this preparation at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen. WARNING! May be irritating to eyes, respiratory system and skin. May cause sensitization by inhalation. Avoid contact with eyes and skin. Do not ingest or inhale. The bovine serum albumin (BSA) in this product is of US origin and meets the current standards for reduction of TSE (Transmissible Spongiform Encephalopathy) risk. Preparation appearance: white to off-white powder.
<b>Potential health effects:</b>	
<b>Routes of exposure</b>	Typical occupational exposure routes are inhalation, eye and skin contact.
<b>Eyes</b>	Eye exposure may cause irritation, redness and watering.
<b>Skin</b>	Skin contact may cause irritation, dryness, redness and itching. As with all enzymes, skin irritation is possible, particularly at high enzyme concentrations, with prolonged enzyme contact, and under moist conditions.
<b>Inhalation</b>	Inhalation may be irritating to the nasal passages and throat. Although there is no evidence that the enzyme(s) in this preparation induces specific respiratory hypersensitivity, all proteins are potential respiratory allergens and may result in respiratory sensitization in certain individuals after repeated and/or prolonged inhalation exposure, producing mild to severe symptoms similar to pollen allergy or asthma, including mucous membrane or eye irritation, itching of the skin or eyes, sneezing, nasal or sinus congestion, coughing, and tightness in the chest. These symptoms may develop as late as 12 hours after exposure.
<b>Ingestion</b>	Effects of ingestion are unknown, but may include digestive system irritation, nausea, vomiting or diarrhea.
<b>Chronic effects</b>	Repeated inhalation may result in respiratory sensitization.
<b>Target organs</b>	Respiratory system.
<b>Medical conditions aggravated by exposure</b>	Individuals with pre-existing allergies to enzyme products may be more susceptible to health effects from accidental exposure and should be evaluated for their suitability for working with this product. Medical supervision for all employees who handle or come in contact with respiratory sensitizers is recommended.

### Section 3: Composition / Information on Ingredients

Ingredient Name	CAS #	EC #	% (wt/wt)
Alpha-glucosidase	9001-42-7	232-604-7	45 - 55
<b>EC R-Phrases:</b> None	<b>EC Hazard Class:</b> None		
Potassium phosphate, monobasic	7778-77-0	231-913-4	25 - 35
<b>EC R-Phrases:</b> None	<b>EC Hazard Class:</b> None		
Bovine serum albumin, fraction V	9048-46-8	232-936-2	10 - 20
<b>EC R-Phrases:</b> None	<b>EC Hazard Class:</b> None		

NOTE - Alpha-glucosidase - Enzyme source: Yeast, Enzyme Commission number: 3.2.1.20

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**Section 4: First Aid Measures**

**First aid procedures:**

<b>Eye contact</b>	Immediately flush eyes with plenty of tepid water for 15 minutes while separating eyelids with fingers. Remove contact lenses if worn. Obtain medical attention if needed or if symptoms, such as redness or irritation persist.
<b>Skin contact</b>	In case of contact, flush skin with cool water and remove contaminated clothing. Obtain medical attention if needed or if irritation or other symptoms develop.
<b>Inhalation</b>	If inhaled, move from exposure area to fresh air. Seek medical attention if breathing becomes difficult or if cough or other symptoms develop.
<b>Ingestion</b>	In case of ingestion, contact a poison control center or physician for instructions.

**Section 5: Fire Fighting Measures**

<b>Flammable properties</b>	Material may burn when exposed to sufficient heat.
<b>Suitable extinguishing media</b>	Use extinguishing media suitable for surrounding fire, such as carbon dioxide, chemical foam, dry chemical or water spray.
<b>Unsuitable extinguishing media</b>	Unknown.
<b>Specific hazards arising from the chemical</b>	Toxic gases may be generated by combustion, including carbon monoxide (CO), carbon dioxide (CO <sub>2</sub> ), phosphorus oxides (POx) and potassium oxides (KOx).
<b>Standard protective equipment and precautions for firefighters</b>	Firefighters should wear NIOSH-approved or equivalent Self-Contained Breathing Apparatus and full protective gear.

**Section 6: Accidental Release Measures**

<b>Personal precautions</b>	Avoid physical contact with material and avoid generating or inhaling dust. Ensure adequate ventilation. Wear Personal Protective Equipment (PPE) as indicated in Section 8. Wash hands thoroughly after handling.
<b>Environmental precautions</b>	No information available.
<b>Methods and materials for containment and clean-up</b>	Do not dry sweep powder. Use HEPA-filtered vacuum, if available, otherwise wet mop to clean up a powder spill. Decontaminate the spill site following standard procedures. Dispose of materials in accordance with all applicable federal, state, local and provincial environmental regulations, per Section 13.

**Section 7: Handling and Storage**

<b>Handling</b>	Follow good laboratory hygiene practices. See Section 8, Engineering Controls. Minimize contact and contamination of personal clothing and skin. Wash hands thoroughly after handling.
<b>Storage</b>	Store desiccated at -20°C (-4°F). Do not store with incompatible substances; see Section 10.

**Section 8: Exposure Controls / Personal Protection**

<b>Exposure guidelines</b>	There are no ACGIH, NIOSH, OSHA or country-specific occupational exposure limits currently established for components present in this preparation at concentrations equal to or greater than 1% (0.1% if carcinogen).
<b>Engineering controls</b>	Use in well ventilated areas. If handling large quantities or there is a potential for dust or aerosol generation, use local exhaust ventilation. Facilities storing or using this material should be equipped with an eyewash fountain and a safety shower.
<b>Personal protective equipment:</b>	
<b>Eye / face protection</b>	Wear appropriate protective chemical safety glasses.
<b>Skin protection</b>	Wear lab coat or other protective garments. Remove contaminated clothing promptly.
<b>Hand protection</b>	Wear chemical resistant protective gloves.
<b>Respiratory protection</b>	A respirator is not required under normal conditions of use.
<b>General</b>	Follow company-specific safety procedures.

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**Section 9: Physical and Chemical Properties**

Appearance	White to off-white powder
Odor	Slight odor
pH	Not applicable
Melting point/Freezing point	Not available / Not applicable
Boiling point	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability/explosivity limits in air, upper	Not applicable
Flammability/explosivity limits in air, lower	Not applicable
Vapor pressure	Not available
Density	Not available
Solubility	Water-soluble
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available

**Section 10: Chemical Stability and Reactivity Information**

Possibility of hazardous reactions	Hazardous polymerization will not occur.
Chemical stability	Stable under ordinary conditions of use and storage. See Section 7.
Conditions to avoid	Unknown.
Incompatible materials	Unknown.
Hazardous decomposition products	Thermal decomposition may lead to release of irritating gases and vapors.

**Section 11: Toxicological Information**

**Acute effects:**

**Toxicological data - Selected LD50s and LC50s**

Potassium phosphate, monobasic 7778-77-0 Dermal LD50 Rabbit: >4640 mg/kg

Local effects	No data available.
Chronic effects	No data available.
Sensitization	No data available.
Carcinogenicity	No data available.
Mutagenicity	No data available.
Reproductive effects	No data available.
Teratogenicity	No data available.

**Section 12: Ecological Information**

Ecotoxicity	No data available.
Persistence and degradability	No data available.
Bioaccumulation potential	No data available.
Mobility in environmental media	No data available.

**Section 13: Disposal Considerations**

Methods of disposal	Dispose of unused product, spilled material and waste in accordance with all applicable federal, state, local and provincial environmental and hazardous waste regulations.
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**Section 14: Transport Information**

Basic shipping description	Not classified as dangerous goods. Not regulated per IATA and DOT regulations.
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### Section 15: Regulatory Information

#### US Federal Regulations:

##### Inventory - United States - Section 8(b) Inventory (TSCA):

Alpha-glucosidase	9001-42-7	XU
Bovine serum albumin, fraction V	9048-46-8	XU
Potassium phosphate, monobasic	7778-77-0	Present

#### International Regulations:

##### Canada - WHMIS - Classifications of Substances

Potassium phosphate, monobasic	7778-77-0	Uncontrolled product according to WHMIS classification criteria
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##### Inventory - Australia - Inventory of Chemical Substances (AICS)

Alpha-glucosidase	9001-42-7	Present
Bovine serum albumin, fraction V	9048-46-8	Present
Potassium phosphate, monobasic	7778-77-0	Present

##### Inventory - Canada - Domestic Substances List (DSL)

Bovine serum albumin, fraction V	9048-46-8	Present
Potassium phosphate, monobasic	7778-77-0	Present

##### Inventory - Canada - Organisms on the Domestic Substances List (DSL)

Alpha-glucosidase	9001-42-7	IUB #3.2.1.20
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##### Inventory - China

Bovine serum albumin, fraction V	9048-46-8	Present
Potassium phosphate, monobasic	7778-77-0	Present

##### Inventory - European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

Alpha-glucosidase	9001-42-7	232-604-7
Bovine serum albumin, fraction V	9048-46-8	232-936-2
Potassium phosphate, monobasic	7778-77-0	231-913-4

##### Inventory - Japan Existing and New Chemical Substances (ENCS)

Potassium phosphate, monobasic	7778-77-0	1-452
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##### Inventory - Korea - Existing and Evaluated Chemical Substances

Alpha-glucosidase	9001-42-7	KE-17760
Bovine serum albumin, fraction V	9048-46-8	KE-05-0011
Potassium phosphate, monobasic	7778-77-0	KE-28622

##### Canadian Hazardous Products

<b>WHMIS Status</b>	Non-controlled
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##### European Communities Dangerous Substances/Preparations

<b>EC Hazard Class</b>	None
<b>Risk Phrases</b>	None
<b>Safety Phrases</b>	None



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### Section 16: Other Information

#### Further Information:

This MSDS has been prepared in accordance with the ANSI Z400.1 format. Every effort has been made to adhere to the hazard criteria and content requirements of the U.S. OSHA Hazard Communication Standard, Canadian Controlled Products Regulation (CPR), UK Chemical Hazard Information and Packaging Regulations, European Communities REACH Regulation, and UN Globally Harmonized System of Classification and Labelling of Chemicals.

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