ALPHA-AMYLASE (A7595 SIGMA-ALDRICH)

Description

Biochem/physiol Actions	An endoamylase that randomly hydrolyzes α-(1→4)-glycosidic linkages in amylose and amylopectin. The breakdown products are oligosaccharides and dextrins of varying chain length. This enzyme is active at high temperatures (70–90 °C).
Legal Information	A product of Novozyme Corp.
Unit Definition	One unit is the amount of enzyme which dextrinizes 5.26 g of dry starch per hour under standard conditions.
	BAN is a trademark of Novozymes Corp.

Properties

form	liquid
mol wt	mol wt 55 kDa
storage temp.	2-8°C

Safety

Symbol	GHS08
Signal word	Danger
Hazard statements	H334
Precautionary statements	P261-P342 + P311
Hazard Codes	Xn
Risk Statements	42
Safety Statements	36
WGK Germany	3

PANCREATIN (P1750 SIGMA-ALDRICH)

Description

Biochem/physiol Actions	Pancreatin will convert not less than 25 times its weight of potato starch into soluble carbohydrates in 5 minutes in water at 40 °C, will digest not less than 25 times its weight of casein in 60 minutes at pH7.5 at 40 °C and will release not less than 2 microequivalents of acid per min per mg pancreatin from olive oil at pH9.0 at 37 °C.
Other Notes	Contains many enzymes, including amylase, trypsin, lipase, ribonuclease and protease. The National Formulary (N.F.) and the U.S. Pharmacopeia (USP) specify amylase, protease and lipase only.

Properties

contains	lactose or sucrose as extender (The sucrose used might contain up to 3.25% starch.)
storage temp.	−20°C

Safety

Symbol	GHS07, GHS08
Signal word	Danger
Hazard statements	H315-H319-H334-H335
Precautionary statements	P261-P305 + P351 + P338-P342 + P311
Hazard Codes	Xn
Risk Statements	36/37/38-42
Safety Statements	22-24-26-36/37
WGK Germany	1

ALPHA-AMYLASE (*Bacillus licheniformis*) (Lot 100301)

E-BLAAM 05/2010

PROPERTIES

1. ELECTROPHORETIC PURITY

- Single major band on Isoelectric focusing (pI = 7.4)
- Single major band on SDS-gel electrophoresis (MW = 58,000)

2. SPECIFIC ACTIVITY AND LEVEL OF OTHER ACTIVITIES

SUBSTRATE	SPECIFIC ACTIVITY (U/mg Protein)
α-Amylase (Ceralpha Reagent at pH 6.0)	54.0
Amyloglucosidase (*p*-Nitrophenyl ß-maltoside)	undetectable
Cellulase (CM-Cellulose 4M)	undetectable
β-Mannanase (carob galactomannan)	undetectable

One Unit of α-amylase is the amount of enzyme required to release one µmole of *p*-nitrophenol from blocked *p*-nitrophenyl-maltoheptaoside per minute (in the presence of excess α-glucosidase) at pH 6.0 and 40°C.

3. PHYSICOCHEMICAL PROPERTIES

pH Optima	6.0-6.5
pH Stability	4.5-8.0
Temperature Optima	75°C
Temperature Stability	< 80°C

4. STORAGE CONDITIONS

The enzyme is supplied in vials of **40 ml** as a stabilised solution and should be stored at 4°C.

The enzyme is supplied at a concentration of 3000 U/ml on Ceralpha Reagent at pH 6.0 and 40°C (i.e. approximately 10,000 U/ml on soluble starch under the same assay conditions).

This enzyme is recommended for use in **Total Dietary Fibre** analytical procedures and the **Megazyme Total Starch test** method. The preparation is effectively devoid of cellulase and is free of catalase.

PEPSIN (P7000 SIGMA ALFRICH)

Product Name:
Pepsin from porcine gastric mucosa - powder, ≥250 units/mg solid

Product Number: **P7000**
CAS Number: 9001-75-6
MDL: MFCD00081840

TEST	Specification
Appearance (Color)	Off-White to Tan
Appearance (Form)	Powder
Solubility (Color)	Colorless
Solubility (Turbidity) 1 mg/mL, 0.01N HCl	Clear to Slightly Hazy
Loss on Drying	≤ 5 %
units/mg solid One unit will produce a change in A280 of 0.001 per min at pH 2.0 at 37 Deg C, measured as TCA-soluble products using hemoglobin as substrate. (final volume= 16 mL. Light path= 1 cm)	≥ 250
Recommended Retest Period 2 years	----------

Analysis Note

Optimum pH is 2-4. Active in 4 M urea and 3 M guanidine HCl. Stable at 60 °C.
Pepsin is irreversibly inactivated at pH 8.0 - 8.5.

AMYLOGLUCOSIDASE (*A. niger*) (Lot 100201a)

E-AMGDF100 07/2010

PROPERTIES

1. ELECTROPHORETIC PURITY

- Single band on Isoelectric focusing (pI ~ 4.0).
- Single major band on SDS-gel electrophoresis (MW ~ 143,500)
- 3260 U/ml (40°C, pH 4.5, soluble starch as substrate).

2. SPECIFIC ACTIVITY AND LEVELS OF OTHER ACTIVITIES

SUBSTRATE	ACTIVITY (U/ml)
Starch (amyloglucosidase)	3260
p-Nitrophenyl ß-maltoside	205
Maltose	365
Ceralpha Reagent (for the measurement of α-amylase)	108
Barley Beta-Glucan (cellulase)	< 0.05
Wheat arabinoxylan (ß-xylanase)	< 0.008

3. PHYSICOCHEMICAL PROPERTIES

pH Optima	4.0
pH Stability	4.-5.5
Temperature Optima	70°C
Temperature Stability	< 60°C

4. STORAGE CONDITIONS

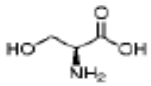
The enzyme is supplied in 50 % (v/v) glycerol plus 0.02 % (w/v) sodium azide, and should be stored at 4°C.

This enzyme is recommended for use in **Total Dietary Fibre** analytical procedures and the **Megazyme Total Starch** test method. The preparation is effectively devoid of cellulase and is free of catalase.

SERINE (SIGMA-ALDRICH)

Product Name:
L-Serine – ReagentPlus®, ≥99% (TLC)

Product Number:	**S4500**
CAS Number:	56-45-1
MDL:	MFCD00064224
Formula:	C3H7NO3
Formula Weight:	105.09 g/mol



TEST	Specification
Appearance (Color)	White to Off-White
Appearance (Form)	Powder
Solubility (Color)	Colorless
Solubility (Turbidity)	Clear
50 mg/ml H2O	
Infrared spectrum	Conforms to Structure
Carbon	33.6 - 35.0 %
Nitrogen	13.0 - 13.6 %
Specific Rotation	13.6 - 15.6 °
(c = 10 in 2 M HCl at 25 deg C)	
Purity (TLC)	≥ 99 %
Recommended Retest Period	----------
5 years	

Specification Date : 04/04/2011