α-AMYLASE (Thermostable) (*Bacillus* sp.)

08/23

Non-recombinant

E-BSTAA

EC: 3.2.1.1
Synonyms: alpha-amylase; 4-alpha-D-glucan glucanohydrolase
CAZy Family: GH13
CAS: 9000-90-2/9000-85-5

Refer to the product lot number Certificate of Analysis for lot specific properties.

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Major band (pI = 7.4) and minor band (PI = 6.5) on isoelectric focusing
- Single major band on SDS-gel electrophoresis (MW = 58,000)

2. SPECIFICITY:

Hydrolysis of α-1,4 glucosidic linkages in linear α-1,4 glucan (e.g. amylose regions in starch).

3. PHYSICOCHEMICAL PROPERTIES:

Recommended conditions of use are at pH 5.0-7.5 at up to 100°C.

pH Optima:	7.0
pH Stability:	5.0-9.0 (> 75% control activity after 24 h at 4°C)
Temperature Optima:	100°C (10 min reaction)
Temperature Stability:	up to 100°C (> 65% control activity after 60 min incubation at temperature)

4. STORAGE CONDITIONS:

The enzyme is supplied as a solution containing 50% glycerol and 0.02% (w/v) sodium azide and should be stored at 4°C.

5. SPECIAL CONSIDERATIONS:

The stability of the enzyme is significantly enhanced in the presence of calcium chloride. Figure 1 below shows a comparison between thermostable α-amylase (**E-BSTAA**) and heat stable α-amylase (Novozymes 120 L) in the presence or absence of calcium chloride at pH 5.0 and 7.0.

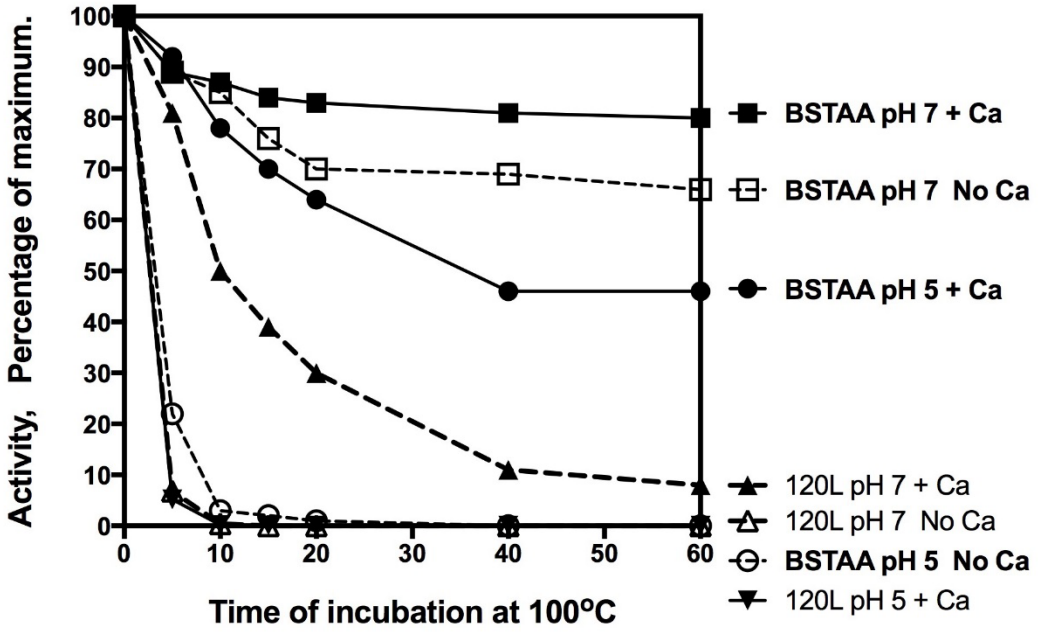

Figure 1. Thermostable α-amylase (**E-BSTAA**) and heat stable α-amylase (Novozymes 120 L) in the presence or absence of 5 mM calcium chloride at pH 5.0 (100 mM sodium acetate) and 7.0 (50 mM MOPS buffer).

6. REFERENCES:

McCleary, B. V., Charmier, M. J. & McKie, V. A. (2019). Measurement of Starch: Critical Evaluation of Current Methodology. *Starch*, **71(1-2)**, 1800146.