# 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.

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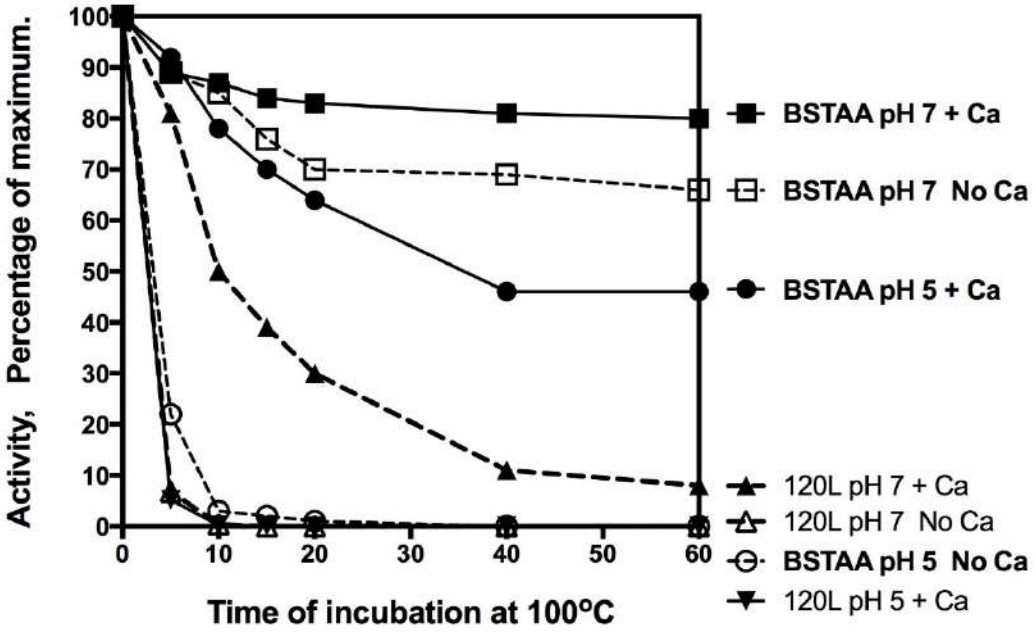


**Figure 1.** Thermostable α-amylase (**E-BSTAA**) and heat stable α-amylase (Novozymes 120 L) in the presence or absence of 5 mM calcium chloride at pH 5.0 (100 mM sodium acetate) and 7.0 (50 mM MOPS buffer).

## 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.

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