



Enzymology Research Center, Inc.  
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## PROTEASE ALKALINE (*Bacillus licheniformis*)

### SPECIFICATION SHEET

I.U.B. 3.4.23.18

#### DESCRIPTION

Is a proteolytic enzyme produced by a strain of spore-forming bacillus: *Bacillus licheniformis*. The enzyme is a serine endopeptidase forming mainly peptides and polypeptides.

#### PHYSICAL PROPERTIES

A light brown to brown colored, free-flowing powder, soluble in water, with characteristic odor and taste.

#### ENZYMATIC PROPERTIES

The pH optimum is 9.5 with a stability range of 7.0 to 10.0. The optimum temperature is 60°C with a stability range of 25°C to 70°C. The enzyme can be inactivated by raising the temperature to 85°C and holding for 10 minutes.

#### ACTIVITY

One bacterial protease unit (PC) is defined as that quantity of enzyme that produces the equivalent of 1.5 micrograms/mL of L-tyrosine per minute under the conditions of the assay. The acceptance criteria for all enzyme assays is: NLT 85.0% and NMT 115.0% of the declared units of enzyme activity.\*

#### COUNTRY OF ORIGIN USA

#### STORAGE/SHELF LIFE/STANDARD PACK SIZE

Product is stable for two years (24 months) if stored at or below 10°C in sealed poly bags in boxes or drums away from sunlight and high humidity. Product is packed in 25 kilo fiber drums or double-wall boxes.

#### HANDLING PRECAUTIONS

Avoid the formation of aerosol and dust of the product. Repeated inhalation of enzyme aerosol or dust may cause allergic type reactions in sensitized individuals. For detailed information please refer to the SDS.

| Description           | Specification     | Method                   |
|-----------------------|-------------------|--------------------------|
| Activity:             | NLT 400,000 PC/GM | FCC                      |
| Identity:             | Protease Alkaline | FTIR                     |
| Moisture:             | NMT 10%           | Ohaus MB-45              |
| Metals:               |                   |                          |
| Lead                  | NMT 5 ppm         | SW-846 6020              |
| Microbiological Data: |                   |                          |
| TPC                   | <10,000 CFU/g     | Soleris / AOAC 990.12    |
| E.coli                | Negative/10g      | Soleris / AOAC 991.14    |
| Enteroc               | <100 CFU/g        | AOAC 2003.01             |
| Salmonella**          | Negative/25g      | BAM Ch. 5 / AOAC 2011.03 |
| Yeast                 | <1,000 CFU/g      | Soleris / AOAC 997.02    |
| Mold                  | <1,000 CFU/g      | Soleris / AOAC 997.02    |
| Coliforms             | <100 CFU/g        | Soleris / AOAC 991.14    |

\*FCC 9 Page 414

\*\*If Enteroc test results exceed 100 CFU/g then Salmonella testing is completed.

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