Protex 6L
Genencor® Bacterial Alkaline Protease

Product Information

■ DESCRIPTION
Protex 6L enzyme is a bacterial alkaline protease derived from a selected strain of Bacillus licheniformis. Typical application areas for Protex 6L enzyme include baking, protein processing, silver recovery from film material and pet food production.

■ TYPICAL CHARACTERISTICS

Activity: 580,000 DU/g (minimum)
Appearance: Amber to light brown liquid
Grade: Food grade, Kosher

Unit Definition
The activity of Protex 6L enzyme is expressed in DU/g. If 1 ml of a 2% solution of an enzyme preparation gives a difference of extinction of 0.400 under the assay conditions [casein, pH 8.5, 40° C (104° F)], the enzyme preparation has a protease activity of 1000 DU. The assay method is available upon request.

pH Dependency
The pH range for the activity of Genencor Protex 6L enzyme is approximately 7.0 to 10.0, with an optimum performance at pH 9.5. The exact pH optimum will depend on process variables, including temperature, time, substrate nature and concentration.

Temperature Dependency
The activity of Protex 6L enzyme is effective in the temperature range from 25° C (75° F) to 70° C (160° F), with an optimum performance at 60° C (140° F). The exact temperature optimum will depend on many process variables, such as pH, time, substrate nature and concentration.

Enzyme Inactivation
The enzyme can be inactivated by holding for 5 - 10 minutes at operational pH, at a temperature of 80 - 85° C (175 - 185° F); or at a pH below 4, holding for 30 minutes at 50° C (125° F); or at a pH above 10, holding for 60 minutes at a temperature of 60° C (140° F).

■ BIOCHEMICAL PARAMETERS

Enzyme type: Alkaline serine endopeptidase
IUB #: 3.4.21.62
Molecular Weight: 22.5 kDa
IEP: 6.8
Activators/cofactors: None required for maximal activity
Inhibitors: Organophosphorous reagents which react with serine (disopropyl fluorophosphate, disisopropyl phosphofluoridate). Oxidative reagents which release active chlorine.

■ APPLICATION RECOMMENDATIONS
Protex 6L protease is effective in hydrolyzing most proteins (hemoglobin, casein, egg yolk, gelatin, fish and other plant and animal proteins) to lower molecular weight peptides. The enzyme expresses more effective hydrolytic activity if the substrate is (partially) unfolded or denatured protein.

■ DOSAGE
A typical Protex 6L enzyme dosage rate of 200 - 400,000 DU per kilogram of protein is recommended as a starting point for the optimization of enzyme dosage.

■ REGULATORY STATUS
Protex 6L enzyme complies with the current FAO/WHO and Food Chemical Codex recommended specifications for food-grade enzymes and is GRAS (Generally Recognized As Safe) in the United States.

■ STORAGE & STABILITY
Protex 6L enzyme will meet the declared activity of 580,000 DU/g upon arrival at the customer’s plant. Genencor enzymes can be safely stored in unopened and sealed original containers. Enzyme containers should be stored below 20° C (70° F), preferentially refrigerated and sheltered against direct sunlight. During storage, Protex 6L enzyme will have an activity loss at elevated temperatures. For more information on storage of this product, please contact your Genencor International representative.

■ PACKAGING
Protex 6L enzyme is available in various packaging sizes. Please contact Genencor International for detailed information. Please note that some Genencor products are sold in full pallet loads only.
SAFETY & ENZYME HANDLING

Inhalation of enzyme dust and mists should be avoided. In case of contact with the skin or eyes, promptly rinse with water for at least 15 minutes.

For detailed handling information, please refer to the appropriate Material Safety Data Sheet, the Enzyme Technical Association (ETA) handbook Working Safely With Enzymes, and the Association of Manufacturers of Fermentation Enzyme Products (Amfep) handbook Guide to the Safe Handling of Microbial Enzyme Preparations. All are available from Genencor International.

TECHNICAL SERVICE

Genencor International will work with customers to enhance processes and solve problems. Let us know what you need and we will assist you.

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