

OPTIMASE® AA 2000

Granular Alpha-Amylase

DESCRIPTION

OPTIMASE® AA 2000 enzyme is a high-strength, low-dust granular amylase product. The OPTIMASE® AA 2000 amylase is derived from a genetically modified strain of *Bacillus licheniformis* which has been engineered to give superior starch hydrolysis in the neutral to low-alkaline pH range.

The OPTIMASE® AA 2000 amylase is highly effective for removal of stubborn starch-based soils such as corn starch, rice starch, and other starch residues from soiled fabrics and surfaces. The OPTIMASE® AA 2000 amylase is highly concentrated and it can be easily integrated into a detergent formulation as a single or multi-enzyme ingredient. OPTIMASE® AA 2000 amylase offers a high level of stability in formulated products – even under challenging conditions.

PRODUCT CHARACTERISTICS

Activity:	Minimum 22,500 POU/g*
Appearance:	Off-white free flowing granules
Bulk Density:	1.0-1.3 kilograms/liter
Mean particle size:	425-575 microns

(*Activity unit definition: The activity of the OPTIMASE® AA 2000 enzyme is expressed in POU units per gram. Enzyme activity is determined via spectrophotometer against an internal standard using a synthetic substrate. The POU assay uses p-nitrophenyl maltoheptoside substrate with the non-reducing terminal sugar chemically blocked. Alpha glucosidase and a glucoamylase are used as coupling enzymes. The blocked terminal sugar prevents attack by glucoamylase. The rate of p-nitrophenyl release is proportional to alpha-amylase activity and is monitored at 405 nm. The assay method is available upon request.

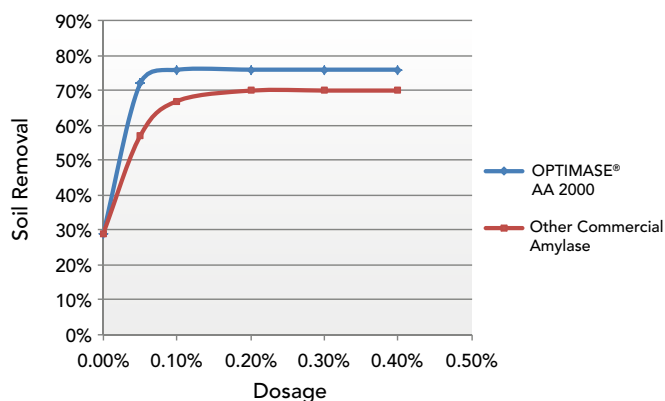
BIOCHEMICAL PARAMETERS

Enzyme type:	Alpha-amylase, 4- α -D-glucan glucanohydrolase
CAS#:	9000-90-2
EC/UB#:	3.2.1.1

PERFORMANCE

OPTIMASE® AA 2000 gave superior performance in removal of starch-based soils under bench-scale washing conditions:

Optimase® AA 2000 Performance on Rice Starch (40° C)



WASHING CONDITIONS

40°C, bench-scale	
Detergent:	ECE-2 + bleach (15% Percarbonate + 2.5% TAED)
Water hardness:	20°FH
Stain:	Rice Starch (CS-28)

DOSAGE

The determination of the required dosage of OPTIMASE® AA 2000 amylase should be based upon actual applications conditions including factors such as pH, temperature, reaction time, substrate composition, and substrate concentration. Small-scale tests should be performed to determine the appropriate dosage of OPTIMASE® AA 2000 amylase.

PACKAGING & STORAGE

OPTIMASE® AA 2000 enzyme is available in various standard package sizes. Please contact DuPont for detailed information.

OPTIMASE® AA 2000 amylase will meet the declared activity of 22,500 POU/gram upon arrival at the customer's plant. Store OPTIMASE® AA 2000 enzyme at 10°C (50°F) or lower to ensure extended shelf life. Detailed storage and stability information is available upon request.

REGULATORY STATUS

OPTIMASE® AA 2000 enzyme is an industrial grade enzyme preparation.

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 and Formulators of Enzyme Products (AMFEP) handbook “Guide to the Safe Handling of Microbial Enzyme Preparations”. All are available from DuPont.

CONTACT INFORMATION

NORTH AMERICA

Rochester, New York (USA)

☎ +1 800 847 5311

☎ +1 585 256 5295

ASIA/PACIFIC

Singapore

☎ +65 6511 5600

☎ +65 6511 5666

EUROPE, MIDDLE EAST & AFRICA

Leiden, The Netherlands

☎ +31 71 5686 168

☎ +31 71 5686 169

Shanghai, P.R. China

☎ +86 21 2307 9588

☎ +86 21 2307 9599

Mumbai, India

☎ +91 22 3008 7131

☎ +91 22 3008 7150

LATIN AMERICA

Buenos Aires, Argentina

☎ +54 11 4021 4700

☎ +54 11 4021 4800

São Paulo, Brazil

☎ +55 11 4613 3800

☎ +55 11 4612 1101

For more information, speak to a member of the Home & Personal Care team at DuPont Industrial Biosciences.

Website: biosciences.dupont.com

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