OPTIMASH™ VR
Xylanase/Cellulase for Rye and Triticale Ethanol Manufacturing

DESCRIPTION

OPTIMASH™ VR xylanase/cellulase is an enzyme preparation intended for the fuel ethanol industry. This product is capable of reducing viscosity and improving separation of different grain fractions of rye and triticale mashes. OPTIMASH™ VR xylanase/cellulase contains a combination of enzymes which effectively modify and digest non-starch carbohydrates, the structural material of plant cells. OPTIMASH™ VR xylanase/cellulase is produced by submerged fermentation of a non-genetically modified strain of Penicillium funiculosum.

PERFORMANCE BENEFITS

The advantages of using OPTIMASH™ VR xylanase/cellulase are:

- Improved starch utilization
- Hydrolysis of non-starch carbohydrates
- Reduced mash viscosity enabling higher gravity fermentation
- Reduced fouling of evaporators and distillation equipment

OPTIMASH™ VR xylanase/cellulase is especially effective on arabinoxylans, β-glucans and cellulose.

TYPICAL CHARACTERISTICS

As a xylanase/cellulase enzyme complex, the product contains multiple enzyme activities but is standardized on the basis of its activity on carboxymethyl cellulose (CMC). The performance of this enzyme preparation is a result of the synergistic effect of all main and side activities and cannot be evaluated only on the basis of the declared activity.

Activity: 3150 CMC-DNS U/g (minimum)
Appearance: Amber liquid
Solubility: Completely miscible in water
Specific gravity: 1.05 to 1.10 g/ml

The activity of OPTIMASH™ VR enzyme is expressed in carboxymethyl cellulose (CMC-DNS) activity units.

DOSAGE GUIDELINES

The optimum dosage levels of OPTIMASH™ VR enzyme will vary with different substrates and operating conditions such as pH, temperature, and reaction time. With no previous use information, OPTIMASH™ VR enzyme should be initially tested at 0.10 - 0.30 kg/metric ton dry substance (DS) for rye mashes and 0.05 - 0.10 kg/metric ton dry substance (DS) for triticale mashes, after which the dosage can be lowered gradually to determine the lowest level at which the enzyme has the required effect.

EFFECT OF pH

The pH Activity Profile of OPTIMASH™ VR xylanase/cellulase is shown in Figure 1.

EFFECT OF TEMPERATURE

The Temperature Activity Profile of OPTIMASH™ VR xylanase/cellulase is shown in Figure 2.
PACKAGING

OPTIMASH™ VR enzyme is available in various standard package sizes. Please contact DuPont for detailed information.

STORAGE

This product will meet the declared activity upon arrival at the customer’s plant. It is advisable to store OPTIMASH™ VR enzyme under refrigerated conditions. Storage above 25°C (77°F) should be avoided.

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.

TECHNICAL SERVICE

Information covering specific applications of this product is available. DuPont will work with customers to enhance processes and solve problems. Let us know what you need and we will assist you.

CONTACT INFORMATION

NORTH AMERICA
Rochester, New York (USA)
Email: +1 800 847 5311
Phone: +1 585 256 5295

EUROPE, MIDDLE EAST & AFRICA
Leiden, The Netherlands
Email: +31 71 5686 168
Phone: +31 71 5686 169

LATIN AMERICA
Buenos Aires, Argentina
Email: +54 11 4875 9500
Phone: +54 11 4875 9529

SÃO PAULO, BRAZIL
Email: +55 11 4613 3800
Phone: +55 11 4612 1101

ASIA/PACIFIC
Singapore
Email: +65 6511 5600
Phone: +65 6511 5666

Shanghai, P.R. China
Email: +86 21 2307 9588
Phone: +86 21 2307 9599

Mumbai, India
Email: +91 22 3008 7131
Phone: +91 22 3008 7150

Lahore, Pakistan
Email: +92 300 8476 404
Phone: +92 423 5437 866

www.dupont.com