



# OPTIMASH™ BG

Beta Glucanase/Xylanase for Barley and Wheat Ethanol Manufacturing

## DESCRIPTION

OPTIMASH™ BG is an enzyme preparation intended for the fuel alcohol industry. This product is capable of reducing viscosity of barley and wheat mashes. OPTIMASH™ BG enzyme contains a combination of enzymes which effectively modify and digest non-starch carbohydrates, the structural material of plant cells. OPTIMASH™ BG is produced by submerged fermentation of a genetically modified strain of *Trichoderma reesei*.

OPTIMASH™ BG meets or exceeds the Joint FAO/WHO Expert Committee on Food Additives (JECFA) and the Food Chemicals Codex (FCC) specification for enzyme preparations used in food and is GRAS (Generally Recognized As Safe) in the United States.

## TYPICAL CHARACTERISTICS

**Activity:** 10,300 CMC U/g (minimum)

**Appearance:** Light amber liquid

**Solubility:** Completely miscible in water

**Specific gravity:** 1.05 - 1.15 g/ml

## UNIT DEFINITION

The activity of OPTIMASH™ BG is expressed in Carboxymethyl Cellulase (CMCU) activity units.

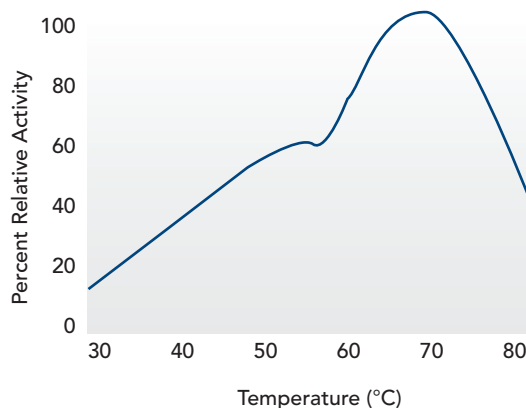
## APPLICATION

In the fuel ethanol industry, OPTIMASH™ BG can be used when milled grain, like barley and wheat, are used as raw material. Advantages of using OPTIMASH™ BG are improved starch utilization and the hydrolysis of non-starch carbohydrates, which otherwise increase mash viscosity or cause fouling problems in distilling equipment.

## DOSAGE GUIDELINES

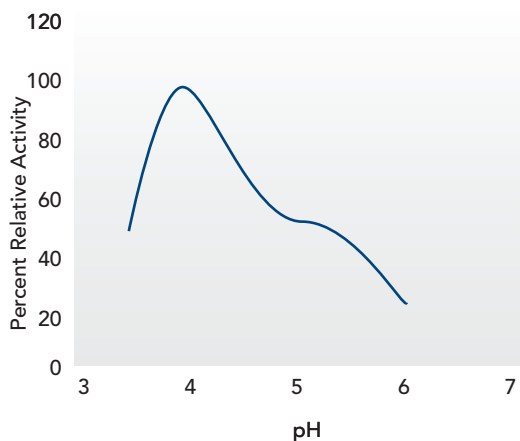
The optimum dosage levels of OPTIMASH™ BG will vary with different substrates and operating conditions such as pH, temperature, and reaction time. With no previous use information, OPTIMASH™ BG should be initially tested at 0.025 - 0.05 kg/metric ton dry substance (DS), for wheat mashes and 0.20 - 0.30 kg/metric ton dry substance (DS) for barley mashes, after which the dosage can be lowered gradually to determine the lowest level at which the enzyme has the required effect.

## EFFECT OF TEMPERATURE



**Figure 1:** Temperature Activity Profile of OPTIMASH™ BG Resultant rate of activity on substrate for 10 minutes at pH 4.6

## EFFECT OF pH



**Figure 2:** pH Activity Profile of OPTIMASH™ BG  
Resultant rate of activity on substrate for 10 minutes at 60°C (140°F)

## PACKAGING

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

## STORAGE

This product will meet the declared activity upon arrival at the customers plant. It is advisable to store OPTIMASH™ BG 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.

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