

## Promod™ 451P - P451P

- Increased loaf volume
- Improved crust colour
- Increased bread flavour
- Improved crumb softness

Many baking processes can be enhanced by the addition of low levels of fungal proteases. This was often supplied in the past as a side activity of fungal alpha amylase. Many of the modern fungal alpha amylases are very "clean" and do not contribute significant levels of protease to the flour. This can lead to a protease deficiency which is undesirable.

Promod™ 451P is a high peptidase proteinase that can overcome this deficiency.

Promod™ 451P is a carefully selected and standardised protease with high peptidase side activities from *Aspergillus sp.* Many modern breads lack volume and flavour because they are lacking in proteinase and peptidase therefore Promod™ 451P can substantially improve the quality of most types of bread.



### SPECIFICATION

Activity	Protease 50 U/g
Biological Source	<i>Aspergillus sp.</i>
Form	Off-white powder (wheat flour as diluent)
Working pH	5.5 - 7.5
Temperature range	55°C

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## APPLICATION & DOSAGE

The dose rate of Promod™ 451P will depend on the type of flour and baking process. The typical range for Promod™ 451P is 10 - 75g per tonne of flour (10 - 75ppm).

Note that Promod™ 451P does not contain significant levels of amylase. This allows optimum levels of both protease and amylase to be used. For amylase supplementation, Biocatalysts Amylase A011P is recommended.

### HEALTH AND SAFETY

Always read the Health and Safety sheet (MSDS) before use and retain. If you are in any doubt about recommended product handling and safety, please contact Biocatalysts before use. Generally, when using enzymes avoid contact with the skin and eyes and do not breathe dusts or aerosols containing them.

### STORAGE

Activity will remain above the minimum analysis specification for at least 12 months from the date of the Batch Certificate of Analysis, when stored below 20°C.

### ALLERGENS

Wheat flour is used as a diluent.

### FOOD STATUS

Prepared from enzymes of GRAS status, and manufactured to FCC/JECFA/WHO/ FAO recommended specifications for enzymes for use in food processing.

### QUALITY

#### 1. Food Safety Policy

The company operates a Hazard Analysis at Critical Control Points (HACCP) system. This ensures that ingredients and the production environment are regularly monitored for contamination and that the processes are designed to produce safe products every time.

#### 2. Good Manufacturing Practice (GMP)

The company's integrated management system encompasses Total Quality, Health and Safety, Food Safety and GMP.

#### 3. ISO9001

Biocatalysts Ltd is certified to BS ISO9001: 2000. Regular Audits are carried out by the British Standards Institute (BSI) to ensure continuing compliance with the standard.

### AVAILABILITY

Promod™ 451P is available in bulk quantities supplied in lined fibre kegs of 25kg. nett.

The production micro-organism used in this product is not a GMO. Within the proposed guidelines of the European Union regarding Genetically Modified products, the above product would be classed as GMO free.

