

# MagiZyme® FAA

Fungal Alpha-Amylase

## Product Information

### Description

MagiZyme® FAA fungal  $\alpha$ -amylase is derived from a selected strain of *Aspergillus oryzae*. Potential application areas for MagiZyme® FAA enzyme include carbohydrate haze removal, flavour modification, accelerated fermentation, malt standardisation, improved attenuation and high maltose brewing syrup production. This enzyme is permitted for general use as a processing aid under FSANZ Standard 1.3.3 E.C. 3.2.1.1.

### Typical Characteristics

Activity:	Min. 40000 – 4400 SKBU/g
Appearance:	Amber to light brown liquid
pH:	5.5 – 6.5
Grade:	Food grade, Kosher
Specific gravity:	1.1 – 1.2 g/ml
Protein content:	1 – 10%

### Unit Definition

The enzymatic activity of MagiZyme® FAA  $\alpha$ -amylase is expressed in SKBU/g. One SKBU will dextrinise 1.0 gram of limit-dextrin substrate per hour under assay conditions. The assay method is available upon request.

### pH Dependency

The pH range for the activity of MagiZyme® FAA enzyme is approximately from 4.4 to 6.0, with an optimum performance at pH 5.2. The exact pH optimum will depend on process variables, including temperature, time, substrate nature, and concentration.

### Temperature Dependency

The enzymatic activity of MagiZyme® FAA enzyme is effective in the temperature range from 40°C to 65°C, with an optimum performance at 50°C. The exact temperature optimum will depend on many process variables, such as pH, time, substrate nature, and concentration.

### Inactivation

The enzyme can be inactivated by holding for 30 minutes at a temperature of 80°C to 85°C.

### Biochemical Parameters

Enzyme type:	1,4- $\alpha$ -D-glucan, glucano- hydrolase
IUB#:	3.2.1.1
CAS#:	9000-90-2

### Application Recommendations

MagiZyme® FAA fungal  $\alpha$ -amylase hydrolyses the  $\alpha$ -1,4-glycopyranose linkages of starch, dextrins and related oligosaccharides. Specifically, chain ends, ( $\alpha$ -1,4 bonds) are attacked and consequently a high percentage of maltose is produced. Maltose is the predominant malt-derived brewing sugar.

Note that the branch points on limit-dextrins are not attacked, so hydrolytic action is self-limiting.

### Carbohydrate Haze Removal

Hazes which do not respond to normal clarification measures may result from starches or oligosaccharides release into the wort from poor quality raw materials or processing errors.

### Correction of Slow Fermentation

Slow or sluggish fermentations can be speeded up using MagiZyme® FAA enzyme.

### Improving the Attenuation Limit

Small, but significant improvements in attenuation limits can be gained by adding MagiZyme® FAA fungal  $\alpha$ -amylase.

### Dosage

The following typical dosage rates are recommended as starting points for the optimisation of enzyme dosage:

Carbohydrate haze removal:	0.5 – 4 ppm
Correction of slow fermentation:	5 – 20 ppm
Improving the attenuation limit:	20 – 75 ppm