



# GLUCOAMYLASE 400 (GAG 511)

Glucoamylase 400 is a GMO free food grade saccharifying glucoamylase or amyloglucosidase enzyme derived from a selected strain of *Apergillus niger*. It is an exoglucosidase capable of hydrolyzing both the  $\alpha$ -1,6 and  $\alpha$ -1,4 glucosidic linkages of starch, liberating single glucose units.



## BENEFITS

Maximizes the conversion of starch containing substrates to fermentable sugars.

Minimizes residual carbohydrates.

Provides a high degree of attenuation.



## DOSE RATE & APPLICATION

A typical dosage of:

0.5 – 10 kg/t of grist added in the brew house.

3 – 5 g/hl wort added during fermentation.

Glucoamylase 400 can be used to produce low calorie beers. In this application it can be added directly to the mash vessel at the mashing-in stage. Alternatively, it can be added to cooled worts after yeast pitching.

Glucoamylase 400 can also be used in the starch industry in the production of maltodextrins, glucose, and high fructose syrups.



## SPECIFICATIONS

### PHYSICAL & CHEMICAL

#### PHYSICAL FORM

Liquid with a SG of 1.0-1.2

#### COLOR

Brown (color may vary from batch to batch)

#### ACTIVITY

minimum 475 AMGP/g

One AMG unit is defined as the amount of enzyme which hydrolyses one  $\mu$ mol of p-nitrophenyl  $\alpha$ -glucopyranoside per minute at 37C and pH 4.4

### MICROBIOLOGICAL

TOTAL VIABLE COUNT < 10,000/g

SALMONELLA SP absent in 25g

COLIFORMS < 30/g

ANTIBACTERIAL ACTIVITY negative by test

MYCOTOXINS negative by test

### HEAVY METALS

ARSENIC < 3 mg/kg

LEAD < 5 mg/kg



## PACKAGING & STORAGE

Glucoamylase 400 is available in 28kg containers and should be stored in a dry cool area and protected from exposure to direct sunlight. abv Glucoamylase 400 is stable for 6 months when the storage temperature does not exceed 20C. If stored at 5C the product will maintain the declared activity for 12 months.



## SAFETY & HANDLING

Avoid unnecessary contact with enzyme preparation during handling. In case of spillage rinse with water. Additional information can be found in the Safety Data Sheet.



## CONFORMITY TO STANDARDS

Glucoamylase 400 complies with the current recommended specifications for food grade enzymes given by the Joint FAO/WHO Expert Committee on Food Additives (JECFA) and the Food Chemicals Codex (FCC).



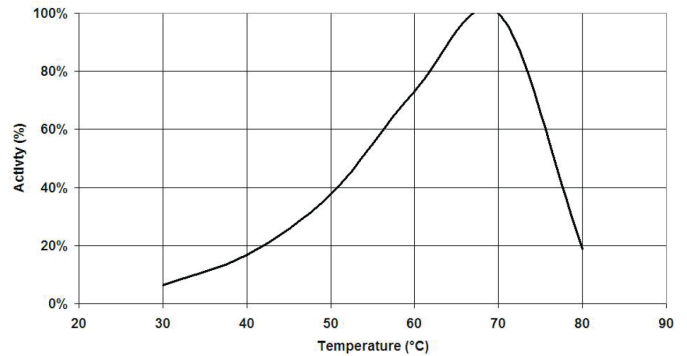
## ADDITIONAL INFORMATION

Glucoamylase 400 can be used between pH 3.5-5.0 and a temperature between 20-70C.

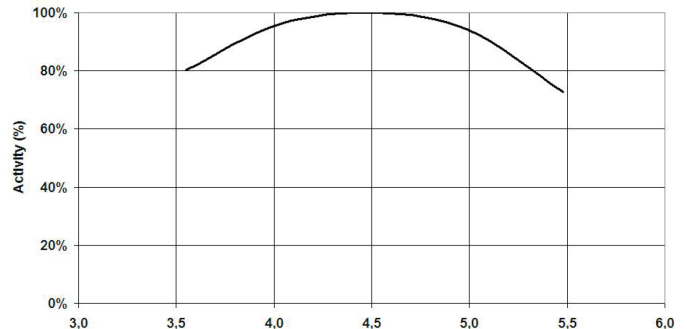
Total inactivation is obtained by heating at 95C for 10 minutes or at 100C for 3 minutes.

Typical beer pasteurization temperatures will not totally inactivate Glucoamylase 400.

Influence of temperature on activity



Influence of pH on activity



**CONTACT US**

For more information, please visit us online at [www.lallemandbrewing.com](http://www.lallemandbrewing.com)

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