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# Liquid Glucoamylase Enzyme

Liquid glucoamylase with pullulanase for starch-to-sugar saccharification in brewing and distilling.

SKU **ENZ103** CATEGORY **BEER BREWING ENZYMES** CAS **9032-08-0**

PRODUCTION ORGANISM **ASPERGILLUS NIGER (GLUCOAMYLASE); BACILLUS SUBTILIS (PULLULANASE)**

APPEARANCE **LIQUID**

Produced by submerged fermentation · Not restricted for transport

| DECLARED ACTIVITY | OPTIMUM TEMPERATURE | OPTIMUM PH | SHELF LIFE |
|---|---|---|---|
| **90,000 u/ml** | **58°C-64°C** | **4.0-4.8** | **12 months** |
| glucoamylase; pullulanase 1,000 u/ml; as stated on the product page | working range 30°C-65°C | activity range pH 3.5-6.0 | sealed, see storage below |

## SPECIFICATION

### IDENTITY

| | |
|---|---|
| Production organism | Aspergillus niger (glucoamylase); Bacillus subtilis (pullulanase) Typical |

### ACTIVITY

| | |
|---|---|
| Glucoamylase activity | **90,000 u/ml** Typical |
| Pullulanase activity | 1,000 u/ml Typical |

### PHYSICAL

| | |
|---|---|
| Physical form | Liquid Typical |
| Colour | Brown; can vary from batch to batch Typical |
| Odour | Normal microbial fermentation odour Typical |

### WORKING WINDOW

| | |
|---|---|
| Activity temperature | 30°C-65°C Typical |
| Optimum temperature | 58°C-64°C Typical |
| Activity pH | 3.5-6.0 Typical |
| Optimum pH | 4.0-4.8 Typical |

**Spec** = release limit, confirmed on every lot's Certificate of Analysis. **Typical** = normal product behaviour, not a release limit.

## STORAGE & PACKAGING

SHELF LIFE
**12 months**

STORAGE
**Keep sealed in a dry and cool place, away from direct sunlight; slight sedimentation is acceptable**

PACK SIZE
**1 kg per bag; 25 kg per drum; 1,125 kg per drum**

ORDERING
**Online or by e-mail; current price on the product page**

## APPLICATIONS

**Saccharify starch in wort and mash**
Converts starch to sugar

**Use in brewing and distilling**
Achieves full wort attenuation

**Combine pullulanase with glucoamylase in starch sugar processing**
Avoids limit dextrin and by-product formation; increases glucose yield

**Hydrolyse alpha-1,6 linkages in branched starch**
Speeds saccharification and increases glucose yield

## DOSAGE

### 0.45 kg per ton of dry starch

per ton of dry starch; starting dose recommended under most conditions

| | |
|---|---|
| Range | **0.35-0.6 kg per ton of dry starch** |
| Temperature | **60-63°C** |
| pH | **4.3-4.5** |
| Substrate | **Dry starch** |

Optimal rate depends on process parameters.
Determine the rate by testing different application rates.

Each lot is released against its specification; the lot Certificate of Analysis reports the measured values.



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Online: enzymes.bio/product/glucoamylase-enzyme-aggressive-liquid-converts-all-starch-to-sugar-in-wort-and-mash

Enzyme preparations are proteins that may induce sensitization; avoid prolonged skin, eye and nasal contact. This technical data sheet gives the product specification and typical values; it is not a batch certificate. A Certificate of Analysis for the supplied lot accompanies each shipment. Safety Data Sheet on request.

SCAN TO ORDER