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Technical Data Sheet
WHC Glucoamylase Enzyme

Description
WHC Glucoamylase Enzyme is derived through Aspergillus niger extraction and refinement, with significant glucose conversion and enzyme activity. In order to saccharify liquefied starch from different sources, such as corn, wheat, barley, rice, tapioca, potatoes, etc., the product is widely used to produce glucose.

Usage
We recommend that small trials be used to determine the precise usage. Temperature of 25°C to 66°C [77°F to 150°F] and a pH of 4.2–4.6 are ideal for industry operation; typically, pH is adjusted first, followed by the addition of gluco-amylase. For Brewing and Distilling we suggest a dose of 150-300ml per tonne of grain the mash and/or 2-10ml per hl directly into the fermenter.

Ingredients Declaration
Water (70 - 80%)

Glucoamylase (EC 3.2.1.3) (10 - 12%)
CAS-No.: 9032-08-0
EC-No.: 232-877-2
Classification according to Regulation (EC) No. 1272/2008 [CLP]: Resp. Sens. 1, H334

Glucose (8 - 10%)
Sodium chloride (5 - 8%)
Sodium benzoate (1 - 2.5%)
Potassium sorbate (1 - 2.5%)

Technical Specifications

Visual Description	*Brown liquid*
Activity	*> 1.500 AMG U/g*
Specific Gravity	*1.10 to 1.20 g/ml*
Dosage	*150-300ml/tonne of grain **or** 2-10ml/hl directly into the fermenter*
Optimal Temperature	*25°C to 66°C **or** 77°F to 150°F*
Optimal pH	*4.2-4.6*
The operational pH range is from pH 3.0 to 5.5.	

Packaging

WHC Glucoamylase Enzyme is available in 1kg, 5kg and 25kg buckets and 1000kg IBC tanks. These materials comply with relevant food-contact legislation, including, EU Regulation 1935/2004 (materials intended for contact with food), EU Regulation 1245/2020 (plastic materials intended for contact with food)), EU Regulation 2023/2006 (GMP for materials intended for contact with food), and FDA CFR 21 (174-179) (USA).

Storage and Handling

Storage Conditions:	Avoid direct exposure to sunlight or moisture while transporting and storing in cool, dry areas. Keeping original sealed container at or below 25°C. Product lasts longer if kept in 4°C to 10°C cold storage. ***This product contains bio-active ingredients. Sunlight, extreme temperatures, and humidity can render enzymes inactive.*** As a result, you should move and store things in a cool, dry place. Avoid being directly exposed to moisture or the sun. Warehouses need to be kept clean, cool, and dry.
Shelf life:	As stated on the pack. Additionally, Enzymes may become less effective over shelf-life, but they can still be used; usage should be increased accordingly.
Handling:	**For Safety:** *Care should be taken to avoid unnecessary skin contact during handling.* ***Please request a Material Safety Data Sheet/MSDS for further advice.*** **For Use**: Starch sources should have complete, extensive, prolonged, and beneficial contact with the enzyme. Continuous saccharification that is fully intermittent must flow smoothly.

If you have any questions or concerns about our product please contact us at lab@whclab.com