



DELTABREW® PLA

Product Data Sheet

Date of issue: 19 December 2022

Pullulanase for starch degradation in brewing

Description: DELTABREW® PLA is a pullulanase obtained by fermentation from a classical strain of *Bacillus licheniformis*. It hydrolyses alpha-1,6-glycosidic linkages in amylopectin, releasing linear alpha-1,4-dextrins and thereby speeding up the consecutive production of glucose. The enzyme works in synergy with a glucoamylase, enhancing the production of glucose in beer production.

Properties: Enzyme: pullulanase IUBMB: 3.2.1.41
 Activity: >2000 PLA units Form: liquid
 Density: 1.10-1.25 g/ml Colour: brown

Colour and appearance may vary from batch to batch. Colour intensity or turbidity is not an indication of enzyme activity.

Application: DELTABREW® PLA is a pullulanase hydrolysing alpha-1,6-glycosidic linkages in amylopectin. The product works in synergy with glucoamylase or β -amylase to produce glucose when manufacturing high attenuation beers.

Conditions of use: DELTABREW® PLA has shown to best perform when used under the following conditions:

Application	Dosage	Recommendation
At the beginning of fermentation	1 - 3 g/hl of wort	Active at pH 4.0 - 5.5 and 8 - 12 °C

GM Status: The product and its constituent enzymes are not genetically modified. Enzyme proteins are produced by fermentation of classical microorganisms, which are removed and not present in the final product. Only agricultural raw materials of non-genetically modified (non-GM) origin are used for the fermentation process and in the final formulation.

Composition: DELTABREW® PLA is stabilised with sodium chloride and preserved with small amounts of potassium sorbate.

Packaging and Storage: DELTABREW® PLA is available in 25 kg polyethylene drums. The product is best stored in the original and unopened packaging under refrigerated conditions (4 - 8 °C) in order to retain maximum activity during storage. Under optimum conditions shelf life is 24 months.

Safety and caution: Enzyme products need to be handled with care. Please consult the separately available Safety Data Sheet for further information.



DELTABREW® PLA

Product Data Sheet

Date of issue: 19 December 2022

Compliance and legal: Our enzyme products are used as processing aids in the food manufacturing process and are thus free from any labelling provisions in the European Union. The product does not fall within the scope of EU regulations (EC) 1829/2003 and (EC) 1830/2003 on genetically modified food and feed.

The product is manufactured to comply with recommended purity specifications given by the Joint FAO/WHO Expert Committee on Food Additives (JECFA), and conforms with the recommended specifications of the Food Chemical Codex for food enzymes.

Purity criteria:	Total plate count	< 50 000 CFU per g	
	Yeasts & Moulds	< 1 000 CFU per g	
	Total Coliforms	< 30 CFU per g	
	Salmonella	absent in 25 g	
	Escherichia coli	absent in 25 g	
	Heavy Metals (as Pb)	< 30 mg/kg	
	Lead	< 5 ppm	
	Arsenic	< 3 ppm	
	Cadmium	< 0.5 ppm	
	Mercury	< 0.5 ppm	
	Special diet information:	Kosher:	certified
		Halal:	certified
		Vegan/Vegetarian:	enzyme product or any constituents are not of animal origin

Certification: WeissBioTech GmbH has a certified quality management system according to ISO 9001:2015 and a certified Food Safety Management System according to FSSC 22000 incl. HACCP, which are reviewed in regular audits.

Made by WeissBioTech GmbH, Germany

To the best of our knowledge, the information contained herein is accurate and complete. However, nothing herein contained shall be construed to imply any warranty or guarantee.

NATUZYM®, DELTAZYM®, and DELTABREW® are registered trademarks of WeissBioTech GmbH. Our technical advice on the uses of our products is given without obligation. WeissBioTech is not responsible for the application and processing of the products by the customer or any third party. The customer is solely liable to comply with the applicable laws and regulations, and intellectual property rights of third parties. This document contains product specifications that may be altered without prior notice.