

PRODUCT SPECIFICATION

Invertase (Bioinvert)

Description

Bioinvert L07 is an alpha D-Fructofuranosidase produced from a selected strain of *Saccharomyces cerevisiae*. The enzyme hydrolyses sucrose into a fructose/glucose mixture (invert sugar). This product is not produced using GM organisms or other products.

Physical

Appearance:	A clear, slightly viscous, free flowing liquid, usually colourless but may have a slight amber tinge
Odour:	Very slight characteristic odour, free from preservatives
Ingredients:	Invertase enzyme concentrate stabilizers
Invertase Activity:	>11,000 U/ml
Specific Gravity:	min. 1.15
pH:	3.0 – 6.0

Heavy Metals

Meets FCC specifications for food grade enzymes.

Total heavy metals	<40 ppm
Lead:	<10 ppm
Arsenic:	<3 ppm

Microbiological

TVC:	<100/ml
Coliforms:	<30 CFU/ml
Salmonella:	absent in 25g
E.coli	absent in 25g
Yeast & Moulds:	max. 10/ml
TE:	<30/ml

Nutritional Data

Protein (%)	0.19
Carbohydrate (%)	0.6
Fat (%)	0.026
Energy (kcal/100g)	161.5
Energy (kj/100g)	679.9

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Temperature Profile

Bioinvert L07 has an optimal temperature optimum of 55-60°C but can be used at lower temperatures with an extended incubation time. It is rapidly inactivated at temperatures above 60°C

Storage & Shelf life

Refrigerated transport is not required, but prolonged storage should be 10°C or below. When stored at 10°C or below, Bioinvert L07 will maintain at least 95% activity for a minimum of 24 months. After this time period, re-assay is advisable. Liquids maintain the declared activity for 3 months when stored at 25°C. A 1-2% drop in activity can occur subsequently.

Safety & Handling

Prolonged skin contact with enzyme preparations should be avoided. In case of spillage or accidental contact, rinse area thoroughly with water. A separate leaflet on safe handling is available on request.

Packaging

Standard packaging for Bioinvert L07 is in 25kg polythene drums, but the product can be custom packed to meet specific customer requirements.

Approval

Bioinvert L07 is approved for use in foodstuffs in the UK as designated by M.A.F.F. and in the USA as designated by the F.D.A.

GMO Statement

The organism used in the fermentation of this product is not genetically modified nor are genetically modified products used in this production.

Country of Origin

Ireland

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Applications

1. Soft Centre and Liquid Centre Confectionary

A soft or fondant type chocolate center consists of a dispersion of small sucrose crystals in a liquid medium composed mainly of sucrose, but including glucose syrup, invert sugar and other ingredients. The flow properties of the chocolate center are determined largely by the solid/liquid phase ratio. The higher the ratio, the more viscose and stiff the system will be.

As discussed above, Invertase can reduce this ratio by converting dissolved sucrose into substantially more soluble invert sugar, thereby allowing more sucrose from the solid phase to go into solution. In this way, a gradual change to a soft or fluid center is affected.

Where Invertase is employed in a fondant mix, the hydrolysis of the sucrose is affected slowly, requiring a period of weeks to reach completion. This delayed action means that when the Invertase containing fondant mix is poured into powder trays it is still sufficiently stiff to withstand the chocolate glazing process. On subsequent storage the Invertase acts at room temperature to gradually produce the required soft or fluid center.

Dose Rates

Bioinvert L07 is incorporated in fondant mixes at a rate of about 125grams/100kg. Where a more liquid center is required the amount of Bioinvert L07 used should be suitably increased.

For the production of invert sugar a dose rate of 0.16% of Bioinvert L07 will, over 12 hours, at a temperature of 50°C and pH 4.5, will produce an 80% invert sugar solution.