

FUNGAL DEXTRANASE FOR THE SUGAR INDUSTRY

DESCRIPTION

ENDOZYM DEXTENDO (fungal dextranase E.C. 3.2.1.11, 1,6-alpha-D-glucan 6-glucohydrolase) is obtained by the controlled fermentation of *Chaetomium gracile* var.

The enzyme is an endo-dextranase capable of randomly hydrolysing the interior alpha-1, 6-glycosidic linkages of dextran and its degradation products..

This activity rapidly reduces the viscosity of dextran solutions. The initial hydrolysis products of **ENDOZYM DEXTENDO** are soluble polysaccharides and oligosaccharides of varying lengths. Prolonged hydrolysis with **ENDOZYM DEXTENDO** results in the formation of glucose and lower levels of isomaltose and isomaltotriose.

ENDOZYM DEXTENDO has a high degree of specificity for the interior bonds of the dextran polymer versus the end sugar unit. **ENDOZYM DEXTENDO** also has pH optima appropriate for application to mixed juice, high thermal stability and no invertase activity. Dextranases from most other organisms do not have this unique and desirable combination of characteristics.

SPECIFICATION

| | |
|------------------|--|
| Form | Slightly viscous liquid |
| Colour | light yellow to light brown |
| Odour | Characteristic odour |
| Identification | Conforms (confirmation of hydrolysing dextran) |
| Specific gravity | 1.1 to 1.2 g/ml |
| pH | 6.1 to 8.4 |
| Heavy metals | max. 40 µg/g |
| Arsenic | max. 2 µg/g |
| Spore | Negative |
| Activity | 3,900 to 4,800 u/g |

The product complies with the requirements of the OMS (WHO), FAO, JECFA and FCC for food grade enzymes.

APPLICATION

Treatment of Raw Juice

ENDOZYM DEXTENDO should be added in the sugar refining process at the earliest possible processing step. In doing so, the enzyme hydrolyses the contaminating dextran to lower viscosity polymers early in the process, minimizing associated dextran problems in subsequent processing steps. Raw juice containing dextran can be enzymatically treated between the crushing and clarification processing steps. The reactor should be sized to provide adequate hold time for dextran hydrolysis at the maximum process flow rate and sufficient agitation to completely mix the reactor contents. If the reactor can be operated near 55 to 60°C and pH 5.0 to 5.5 by preheating and partial liming, optimal dextran hydrolysis can be achieved with a minimum reactor size and hold time.

The application rate of **ENDOZYM DEXTENDO** varies with Brix, dextran content of the raw juice holding time and processing conditions. This assures an optimum process and uniform product quality.

Use level **ENDOZYM DEXTENDO** in raw juice (g/MT Raw Juice)

| Treatment time (minutes) | 2.000 ppm Dextran | 5.000 ppm Dextran | 10.000 ppm Dextran | 15.000 ppm Dextran |
|--------------------------|-------------------|-------------------|--------------------|--------------------|
| 15 | 4.0 | 6.0 | 8.0 | 12.0 |
| 30 | 2.0 | 3.0 | 4.0 | 6.0 |
| 60 | 1.0 | 1.5 | 2.0 | 3.0 |

Treatment of High Brix Syrup:

When a holding reactor is not available between the tandems and the clarifiers for the treatment of raw juice, an alternative site for **ENDOZYM DEXTENDO** addition must be considered. In the presence of concentrated, high Brix syrup (65 Brix), **ENDOZYM DEXTENDO** demonstrates extended thermal stability over the temperature range of 60 to 85 °C. The excellent thermal stability of **ENDOZYM DEXTENDO** allows the addition of the enzyme in the penultimate or the last effect of the multiple effect evaporator. Dextran breakdown will occur in the evaporator and in the syrup buffer tank which follows. The rate of dextran hydrolysis decreases with increasing sucrose solids. Consequently, the enzyme concentration and/or reaction time must be increased in the treatment of concentrated, high Brix syrups.

The application rate of **ENDOZYM DEXTENDO** varies with the dextran content of high Brix syrups, holding time and processing conditions. To optimize the use of **ENDOZYM DEXTENDO** we recommend analysing the syrup for dextran content and conducting a number of trials prior to routine use of the enzyme. This assures an optimum process and more uniform product quality.

Storage Lower than 25 °C
Optimal storage near 4 °C for maintaining the declared activity for at least a year

Packaging: 25 kg drum



AEB Africa (Pty) Ltd- 18 Track Crescent, Montague Gardens, Cape Town. Tel : 021 551 2700 E-mail : aebnews@iafrica.com

DISTRIBUTED BY:  ORM Import & Export, 2 Vaal Road, Milnerton, Cape Town. Tel: 021 555 4408