

## Enzyme Treatment

### SIHAZYM™ HT 300

#### Special Enzyme for Starch Degradation in Pomaceous Fruit Juice (Hot Enzymation)

SIHAZYM HT 300 enzyme is the high concentrated Amyloglucosidase for the safe and economic degradation of starch. SIHAZYM HT 300 enzyme is produced from a selected strain of *aspergillus niger* and is available as a clear, brown liquid with a slight smell, typical of fermented products.

#### Application and Mode of Action

SIHAZYM HT 300 enzyme hydrolyzes gelatinized starch and Dextrin completely thus assisting the clarification and filtration of the juices.

The enzyme requirement can easily be ascertained by conducting the iodine test. 0.034 fl oz (1 ml) of diluted iodine 0.71 oz (20 g) potassium iodide and 0.035 oz (1 g) iodine are poured on top of 0.338 fl oz (10 ml) fruit juice. Blue coloring (high amounts of starch), violet coloring (partially hydrolyzed starch) or red coloring (dextrin) formation indicates that the test is positive.

In order to ascertain the total amount of starch (gelatinized/non gelatinized) prior heating of the fruit juice samples to 176 °F (80 °C) and subsequent cooling down to 77 °F (25 °C) is necessary.

Gelatinized starch and dextrin age and this retrograding process occur particularly in juice and concentrates that are stored under cool conditions. Retrograded starch is no longer detectable when applying the iodine test and enzymatic starch degradation is no longer possible. Therefore, the addition of SIHAZYM HT 300 enzyme should take place as early as possible, most advisably in heat-treated juices.

#### Dosage

High starch content (early season fresh fruit)	2.56 – 3.84 fl oz/1,000 gal (2 – 3 ml/100 l)
Average (medium) starch content (end-of-season fruit)	1.28 – 2.56 fl oz/1,000 gal (1 – 2 ml/100 l)
Low starch content (Stored fruit)	0.64 – 1.28 fl oz/1,000 gal (0.5 – 1 ml/100 l)

With extremely high starch content, lower temperatures or shorter holding times, a higher enzyme dosage will increase the enzymation efficiency significantly.

SIHAZYM HT 300 enzyme is inactivated at temperatures exceeding 149 °F (65 °C) and by contact with bentonite.

#### Special Notes

**Dosage:** Avoid stirring.

The dosage strongly depends on the quality, type, degree of ripeness and operating conditions.

**Holding time:** Enzymes need time to react. Therefore, please allow a holding time of at least 30 minutes.

**Temperature:** The enzyme is also active at higher temperatures (up to 149 °F (65 °C)). However, higher temperatures are critical for aroma quality and can lead to microbial problems within a temperature range of 86 – 113 °F (30 – 45 °C). Avoid mash temperatures below 50 °F (10 °C).

SIHAZYM HT 300 enzyme is inactivated either in the flavoring system or during pasteurization.

#### Safety and Purity

SIHAZYM HT 300 enzyme complies with the specifications of FAO/WHO (JECFA and FCC) for food-grade enzymes. If used according to the instructions and processed correctly, the use of this enzyme does not entail any health hazards.

The Amyloglucosidase activity is standardized to 1,100 AGU/fl dr (300 AGU/ml).

Further safety information can be found in the relevant Material Safety Data Sheet, which can be downloaded from our website.

SIHAZYM HT 300 enzyme is bottled aseptically after sterile filtration and is therefore practically germ-free.

#### Storage

SIHAZYM HT 300 enzyme must be stored in a cool (< 41 °F (5 °C)) and dry place. Under these conditions it will maintain its declared activity for at least two years. At storage temperatures of 68 °F (20 °C), SIHAZYM HT 300 enzyme will maintain the declared activity for at least three months, after which a loss of activity of 1 – 2% per month must be expected.

Once opened, packages should be used up immediately.



## Delivery Information

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SIHAZYM HT 300 enzyme is sold under article no. 95.201.250 and is available in the following package size:

6.6 gal (25 l) PE jerrycans

HS Customs Tariff: 3507 90 90

## Certified Quality

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SIHAZYM HT 300 enzyme is regularly monitored during the production process. These tests include comprehensive technical function criteria as well as safeness according to food product laws. Furthermore, stringent inspections are performed immediately prior to and during final packaging.

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