

Enzyme Treatment Panzym® F2



Starch Degradation in Pip Fruit Juices (Cold and Hot Enzymation) to Prevent Filamentous Precipitation

Panzym F2 enzyme from Eaton's Begerow Product Line is a highly concentrated special enzyme preparation for the safe and economical degradation of starch at 59 – 131 °F (15 – 55 °C) in pip fruit juices. Due to the unique molecule structure of the enzyme protein, there is no filament-like precipitation. Panzym F2 enzyme is produced from a selected strain and is available as a clear, brown liquid with a slight smell, typical of fermented products.

Application and Mode of Action

Panzym F2 enzyme is a special amylase for the complete breakdown of starch into glucose at temperatures of 59 – 131 °F (15 – 55 °C). High dosaging, which, when using traditional amyloglucosidase, leads to extensive post precipitation does not occur when using Panzym F2 enzyme.

Panzym F2 enzyme hydrolyzes gelatinized starch and dextrin completely thus assisting the clarification and filtration of juices.

The enzyme requirement can be easily ascertained by conducting the iodine test. 0.034 fl oz (1 ml) of diluted iodine 0.07 oz (2 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 molecule starch), violet coloring (partially hydrolyzed starch) or red coloring (dextrin) indicates that the test is positive.

In order to determine 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 juices and concentrates that are stored under cool conditions.

Retrograded starch is no longer detectable when carrying out the iodine test and enzymatic starch degradation is no longer possible. Therefore, the addition of Panzym F2 enzyme should be made as early as possible, most advisable in heat - treated juices or dearomatized juices.

Dosage

High starch content (early season fruit)	5.12 – 7.68 fl oz/1,000 gal (4 – 6 ml/100 l)
Average (medium) starch content (end-of-season fruit)	2.56 – 5.12 fl oz/1,000 gal (2 – 4 ml/100 l)
Low starch content (stored fruit)	1.28 – 2.56 fl oz/1,000 gal 1 – 2 ml/100 l

With extremely high starch content, unfavorable temperatures or to short holding times, optimal enzymation can be ensured by increasing the dosage of Panzym F2 enzyme. The product is inactivated at temperatures exceeding 140 °F (60 °C) and by contact with bentonite.

Safety and Purity

Panzym F2 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 amylolytic activity is standardized.

Panzym F2 enzyme is bottled aseptically after sterile filtration and is therefore practically germ-free. The product does not contain any preservatives.

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

Storage

Panzym F2 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 3 years.

At storage temperatures of 68 °F (20 °C), Panzym F2 enzyme will maintain the declared activity for at least 3 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

Panzym F2 enzyme is sold under article no. 95.109 and is available in the following package sizes:

0.26 gal (1 l)	PE-bottle
12 x 0.26 gal (1 l)	in cardboard
6.6 gal (25 l)	PE jerrycan

HS Customs Tariff: 3507 90 90

Certified Quality

Panzym F2 enzyme is regularly monitored throughout the manufacturing process to ensure consistently high product quality. These tests cover both technical functional criteria and absolute safety under foodstuff legislation. Additional strict controls are carried out immediately before and during the final packing stage.

Panzym® is a registered trademark of Novozymes A/S.

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For more information, please e-mail us at filtration@eaton.com or visit us online at eaton.com/filtration for a complete list of Eaton's filtration products.

Not all products in Eaton's Begerow Product Line are available in all regions. Please contact your local Eaton Filtration office to determine availability.

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