

## Enzyme Treatment

### Panzym® XXL

### Complete Depectinization, Particularly of Apple Juice, Pear Juice, and Vegetable Juices

Panzym XXL enzyme is a pectolytic, liquid enzyme preparation, produced through submerged fermentation of an *aspergillus species*. The newly developed pectinase product is particularly suitable for the depectinization of apple and pear juice. Panzym XXL enzyme is well-balanced and optimized for the essential enzyme activities.

Applied to fruit juices, Panzym XXL enzyme achieves excellent alcohol test performance and complete removal of araban. The resulting juice is easy to filter and satisfies all relevant juice quality standards.

The advantages of Panzym XXL Enzyme:

- Thermally stable product  
→ Little effect from fluctuations in temperature
- Juice is easier to filter  
→ Reduced production costs
- Less galacturonic acid formation  
→ Better blending capabilities
- Complete removal of arabans  
→ Improved production process

#### Application and Function

Panzym XXL enzyme is capable of breaking down pectin substances in plant material. Panzym XXL enzyme can be used in fruit juice industry, where quick and complete depectinization of fruit juices is required. The main application is in the production of apple and pear juice concentrates. Panzym XXL enzyme is exceptionally good for selective degrading soluble pectins with different degrees of esterification, for depectinization, clarification, and viscosity reduction. The product gives an excellent alcohol test. Its well-balanced enzyme spectrum gives fruit juices that satisfy all relevant quality standards.

The active components of Panzym XXL enzyme are readily soluble in water at all concentrations that occur in normal usage. Any turbidity that may occur in the enzyme preparation has no influence on the volumetric activity or the handling characteristics of the product.

The enzyme is preferably diluted with tap water and added to the depectinization tank after aroma recovery or a pasteurization step as a 10% solution, either in portions or via a metering pump.

#### Dosage

Application	Dosage fl oz/1,000 gal (ml/1,000 l)	Dwell time/ temperature
Apple/pear juice ~12 °Bx	2.5 – 5 (20 – 40)	1 – 2 h/131 – 140 °F (55 – 60 °C) or 4 – 8 h/approx. 68 °F (20 °C)

Dosage: The dosage strongly depends on the pectin content of the juice and on the operating parameters.

**Holding time:** Shorter or longer holding times are possible. Completion of the enzyme reaction should be carefully checked.

**Temperature:** Due to the reduced enzyme activity, temperatures below 50 °F (10 °C) should be avoided.

Prior to commencing the next processing stage (e.g. fining, filtration), it is advisable to use an alcohol test (pectin test) to verify that pectin was broken down completely.

Panzym XXL enzyme is inactivated either during the concentration stage or during the pasteurization stage.

## Safety and Purity

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Panzym XXL complies with the FAO/WHO (JECFA and FCC) specifications for enzymes in the food industry.

Panzym XXL enzyme is produced with the aid of microorganisms, which are characterized as self-cloned according to EU definition. The microorganism is classified as not genetically modified based on

- EU Directive 2001/18/EC (the version currently in effect)
- The German Genetic Engineering Act (GenTG).

### **The national legislation for other countries must be adhered to accordingly.**

Irrespective of the classification of the production organism, the Panzym XXL enzyme is **not genetically modified**.

Panzym XXL enzyme is filled aseptically following sterile filtration and is therefore virtually germ-free. Panzym XXL enzyme is a brownish, liquid enzyme preparation that has the typical odor of fermented products.

Panzym XXL enzyme is characterized as follows:

- Production organism:
  - *Aspergillus niger*
  - *Aspergillus aculeatus*
- Specified activity: 10,000 PECTU/g (Pectin lyase)

When used as directed and handled correctly, there are no known unfavorable effects associated with this product.

**Further information on safety can be found in the Material Safety Data Sheet, which is available for download from our website.**

## Storage

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The product should be stored with the packaging intact away from sunlight at a temperature of 32 to 50 °F (0 to 10°C).

Unfavorable storage conditions (exposure to direct sunlight, higher storage temperatures) may require a higher dosage.

Once opened, the product should be used up as soon as possible.

## Delivery Information

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Panzym XXL enzyme has the article number 95.248 and is supplied in the following packaging unit:

44 lb (25 kg) PE canister

## Certified Quality

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Panzym XXL enzyme is inspected regularly during the production process to ensure consistently high product quality.

Strict controls also take place immediately before and during final packaging.

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**For more information:**

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