

## PRODUCT SPECIFICATION

### STABIZYM<sup>®</sup> HIGH PERFORMANCE NUCLEASE

#### Product Description

Stabizym<sup>®</sup> Nuclease is a food-grade nuclease that is highly expressed by using *Kluyveromyces marxianus* and *Kluyveromyces lactis* as the host strain. The product is free from endotoxin and other safety risks of *E. coli* source enzyme preparations, which opens up the possibility of nucleases for use in the food and daily chemical industries.

#### Applications

The efficient degradation of nucleic acids can be a crucial step in many industrial applications. Stabizym<sup>®</sup> Nuclease is a versatile endonuclease that provides cost- efficient solutions therefor, for example, but not limited to:

- ✓ Processing of soy sauces, dips, flavour extracts and other condiments
- ✓ Processing of various savoury foods and seasoned foods
- ✓ Reducing viral and pathogenic genetic material contamination in food to improve food safety
- ✓ Disruption of biomembrane structure and protection against the risk of harmful microorganisms
- ✓ Natural product extraction and purification



Nuclease for processing of Various Savoury Foods



Nuclease for flavouring products

### Enzymatic and Physico-Chemical Properties

| Description        | Method                    | Specification               |
|--------------------|---------------------------|-----------------------------|
| Color              | Sensory analyses          | Light yellow to brown color |
| Enzymatic activity | Spectrophotometry         | 15,000-16,000 U/g           |
| Density            | 25 °C/kg/L                | 1.10-1.20 kg/L              |
| pH-value           | pH Meter                  | 6.0-6.8                     |
| Ingredients        | Nuclease, Glycerol, Water |                             |
| Preservative       | No preservative added     |                             |

### Micro-biological and Heavy Metal Standards

|                        |                 |                            |
|------------------------|-----------------|----------------------------|
| Aerobic plate count    | <10 (cfu/g)     | Standard agar plate method |
| Salmonella             | Negative in 25g | BGLB agar plate method     |
| Coliform bacteria      | <10 (cfu/g)     | VRBA plate method          |
| Escherichia coli       | <10 (cfu/g)     | VRBA Plate method          |
|                        | <0.30 (mpn/g)   | MPN counting method        |
| Antibacterial activity | Negative        | BGLB agar plate method     |
| Total Arsenic          | <3.0 (ppm)      | as As                      |
| Total Heavy Metals     | <5.0 (ppm)      | as Pb                      |

### Cofactor and Reaction Conditions

1 - 2 mM Mg<sup>2+</sup> cations for optimal activity;  
Optimum at 37 °C (5-40°C) , pH 6.0 – 10.0

### Shelf Life and Storage Condition

18 months from manufacturing date in the original unopened bottle, keep under room temperature, dark and dry conditions. Once opened the package, please use immediately. If aseptic conditions should be retained, please reseal it in a sterile environment or discard the rest; If not, please seal it and refrigerate for storage.

### Packaging

Stabizym® Nuclease preparation is packaged in 1 kg bottle or 3 kg BIB. Other packaging on request.

Packaging material is food grade and compliant to EU Regulations VO 1935/2004 and VO10/2011 and corresponding amendments.

### List of Allergens

| Allergen   | Recipe included |    | Cross contamination |    |
|--|-----------------|----|---------------------|----|
|  | yes             | no | yes                 | no |
| Gluten   |                 | ✓  |                     | ✓  |
| Crustaceans and products thereof   |                 | ✓  |                     | ✓  |
| Eggs and products thereof  |                 | ✓  |                     | ✓  |
| Fish and products thereof  |                 | ✓  |                     | ✓  |
| Peanuts and products thereof   |                 | ✓  |                     | ✓  |
| Soybeans and products thereof  |                 | ✓  |                     | ✓  |
| Milk and products thereof (including lactose)                                    |                 | ✓  |                     | ✓  |
| Nuts   |                 | ✓  |                     | ✓  |
| Celery and products thereof  |                 | ✓  |                     | ✓  |
| Mustard and products thereof   |                 | ✓  |                     | ✓  |
| Sesame seeds and products thereof  |                 | ✓  |                     | ✓  |
| Sulphur dioxide and sulphites at concentrations of more than 10 mg/kg or 10 mg/L |                 | ✓  |                     | ✓  |
| Lupine and products thereof  |                 | ✓  |                     | ✓  |
| Mollusc and products thereof   |                 | ✓  |                     | ✓  |

### Quality

Stabizym® Nuclease is manufactured following HACCP rules and compiled with ISO 9001 management quality system and Food Safety System Certification FSSC22000. The product complies with JECFA/FAO/WHO specifications for enzymes used in food processing. Stabizym® Nuclease products are: certified Kosher and certified Halal, allergen-free.

### BSE/TSE

The manufacturing process is free of raw materials from animal origin.

### Antibiotics

No antibiotics are used in the manufacturing process.

### GM status

Stabizym® Nuclease is manufactured by a fermentation process of a particular strain of *Kluyveromyces marxianus* and *Kluyveromyces lactis* which is not present in the final product. In addition, no ingredients derived from GMOs are used in the production process.

### Contact

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#### Disclaimer:

*This product specification describes the composition and properties of our product to the best of our knowledge. It replaces all previous versions and is valid without signature. Due to raw material variations deviations from this specification may occur within good manufacturing practice in order to standardize our product. Use and application as described isn't guaranteed and should be evaluated by the buyer, this includes infringement of third parties patent rights. The permissibility of our product may be limited to certain applications. It is the duty of the buyer to ensure that the use of our product and the placing on the market of the food made with it complies with local applicable legal requirements, taking also into consideration specific needs, e.g. those of children.*