



Kerry Food Ingredients (Cork) Limited
Kilnagleary,
Carrigaline,
Cork Ireland

Phone: +353214376400
Fax: +353214376480

PRODUCT SPECIFICATION

PRODUCT DETAILS

| | |
|---------------------|---|
| Product Name | Bioprotease NPL (25Kg) |
| Kerry Code | 20583891 |
| Legacy | |
| Product Description | Bioprotease NPL is a proteolytic enzyme derived from a selected strain of <i>Bacillus</i> spp. This product is made from a natural raw material and as such may be subject to some batch to batch colour and/or odour variation, but these variations are not an indicator of enzyme activity and do not impact on product performance. |

INGREDIENT LISTING

Water, Glycerin, Enzyme, Sodium Benzoate, Potassium Sorbate

USAGE / APPLICATION INFORMATION

Bioprotease NPL is primarily used in the production of protein hydrolysates, which constitute an alternative to intact proteins for infant formula base.

Under recommended conditions, Bioprotease NPL can produce a hydrolysate with a clean non-bitter flavour while also having no direct impact on hydrolysate coloration.

Optimal processing conditions (pH 7.0 + 0.5, 55°C/130°F) allow the reaction to complete over approximately a 3 hour hydrolysis period to give a final DH of 5 - 15% when dosed at 0.1 - 0.3 % on a total solids/ protein basis.

Bioprotease NPL is also used in biscuit and cracker manufacturing when extra dough relaxation is required.

Benefits

- Softens the gluten structure
- Delivers consistent volume
- Reduces brittleness/breakage in the final cracker.

The dose rate is very dependent on processing time and temperature, but will usually be in the range of 1.5-10g per 100 Kg flour.

KEY PARAMETERS

| Test | Min | Max | Units |
|------------------|--------|--------|-------|
| Neutral Protease | 70,000 | 91,000 | u/ml |

ALLERGEN DATA

| Allergen | Present Yes/No |
|---|-------------------|
| Beef and products thereof | No |
| Carrot and products thereof | No |
| Celery and products thereof | No |
| Cereals containing gluten(1) | No |
| Chicken meat and products thereof | No |
| Cocoa and products thereof | No |
| Coriander and products thereof | No |
| Corn/maize and products thereof | No |
| Crustaceans and products thereof | No |
| Egg and products thereof | No |
| Fish and products thereof | No |
| Glutamate and products thereof | No |
| Milk and products thereof (including lactose) | No |
| Mustard and products thereof | No |
| Nuts (other than peanuts) and products thereof(2) | No |
| Molluscs and products thereof | No |
| Legumes and products thereof | No |
| Lupin and products thereof | No |
| Peanuts and products thereof | No |
| Pork and products thereof | No |
| Sesame Seeds and products thereof | No |
| Soybeans and products thereof | No |
| Sulphur Dioxide/Sulphites > 10ppm | No |
| Wheat and products thereof(3) | No |

Note: All reasonable precautions that could be expected of a responsible manufacturer have been taken to prevent cross contamination in the raw materials used and in the manufacturing process. Product has been produced in a plant that handles cereals containing gluten (primary wheat flour).

Definitions conform to Regulation (EU) 1169/2011 as amended, US Food Allergen Labelling and Consumer Protection Act (FALCP) and ALBA-List.

(1) i.e. wheat, rye, barley, oats, spelt, kamut or their hybridised strain

(2) Nut allergens: Almond *Prunus dulcis* (Rosaceae) Beech nut *Fagus* spp. (Fagaceae), Brazil nut *Bertholletia excelsa* (Lecythidaceae), Butternut *Juglans cinerea* (Juglandaceae), Cashew *Anacardium occidentale* (Anacardiaceae), Chesnut (Chinese, American, European, Seguin) *Castanea* spp.(Fagaceae), Chinquapin *Castanea pumila* (Fagaceae), Coconut *Cocos nucifera* L. (Arecaceae (alt. Palmae)), Fibert/Hazelnut *Corylus* spp. (Betulaceae), Ginko nut *Ginkgo biloba* L.(Ginkgoaceae), Hickory nut *Carya* spp.(Juglandaceae), Lichee nut *Litchi chinensis* Sonn. (Sapindaceae), Macadamia nut/Bush nut *Macadamia* spp.(Proteaceae), Pecan *Carya illinoensis* (Juglandaceae), Pine nut/Pinon nut *Pinus* spp. (Pineaceae), Pili nut *Canarium ovatum* (Burseraceae), Pistachio *Pistacia vera* L. (Anacardiaceae), Sheanut *Vitellaria paradoxa* (Sapotaceae), Walnut (English, Persian, Black, Japanase, California), Heartnut, *Juglans* spp.(Juglandaceae)

(3)i.e. common wheat, durum wheat, club wheat, spelt, semolina, Einkorn,emmer, kamut and triticale

| SUITABILITY DATA | | Yes = Suitable, No = Unsuitable | Comment/Certification Status |
|-------------------------|--|--|-------------------------------------|
| Vegetarian (Ova-lacto) | | Yes | |
| Halal | | Certified | Comment |
| Kosher | | Certified | Suitable |

| NUTRITION INFORMATION | | |
|------------------------------|----------------------|-------------|
| Nutrient | Typical Value | Unit |
| Energy | 381 | kJ/100 g |
| Energy | 91 | kCal/100 g |
| Total Carbohydrates | 1 | g/100 g |
| Total Fat | 0 | g/100 g |
| Protein | 4 | g/100 g |
| Moisture | 50 | g/100 g |
| Ash | 2 | g/100 g |
| Data Source | | |

| GMO STATUS |
|--|
| This product is not a GMO. The production strain is not present in the final enzyme product. The production strain has not been improved by means of modern biotechnology. |

| PROCESS SUMMARY | |
|---|--|
| Kerry has implemented and maintains food hygiene standards and HACCP Plans in line with the requirements of food legislation. | |
| The Carrigaline, Co Cork site is certified against the requirements of FSSC22000 and ISO14001. | |

| RECOMMENDED SHELF-LIFE & STORAGE | |
|---|--|
| Transport & Storage Conditions: | When stored at <10°C the shelf-life is 24 months, at 18°C the shelf-life is 12 months & at 30°C the shelf-life is 6 months |
| Shelf life (original package): | 365 days (12 months) |

| PACKAGING | |
|------------------|---------------|
| Pack Size (Net) | 25 Kg |
| Pack Type Inner | Plastic bag |
| Pack Type Outer | Cardboard box |

| HEALTH & SAFETY DATA | |
|---|--|
| Liquid enzyme products may cause skin or eye irritation and inhalation of aerosol can result in sensitisation of susceptible individuals. Standard handling procedures should be followed to prevent direct contact with the product or inhalation of aerosol." & chr (10) & "A separate Safety Data Sheet (SDS) is available on request. | |

LEGISLATION & WARRANTY STATEMENT

We warrant that the product is manufactured in accordance with the specification and is manufactured and packaged in compliance with all EU food and food safety legislation applicable to products of this nature at time of manufacture and sale by us. We warrant that the product also complies with the food purity specifications for food-grade enzymes recommended by the JECFA and recommended in the Food Chemical Codex.

We make no further warranty in relation to the product or as to the suitability of the product for any specific purpose or application. The user should satisfy itself as to the suitability of the product as an ingredient in a specific application or for any use whatsoever. The information supplied in this specification sheet is in accordance with our product formulation, is also based on manufacturing plant data and on data provided by our raw material suppliers and is accurate to the best of our knowledge at the date of issue of this specification. Local national regulations should also be consulted by user in relation any specific application and in relation to appropriate ingredient declarations as legislation may vary from country to country.

CONFIDENTIALITY

This document and the information contained within it remains the property of Kerry Group and must not be disclosed to any third party without prior written permission of the company.