

OPTIPEP 90 DH 4 INSTANT

TECHNICAL SPECIFICATION

Product Description Optipep 90 DH4 Instant is an enzyme hydrolysed Whey Protein Isolate providing a high quality source of peptides. It is lightly hydrolysed offering a low bitter flavour profile and is suitable for use in enhanced nutritional and functional applications. This ingredient has been instantised to improve its solubility and dispersibility in water.

Ingredient Listing Hydrolysed Whey Protein Isolate (**Milk**) (Emulsifier: **Soy Lecithin**)

Customer Deimos

| Chemical | Specification | Typical | Test Method |
|------------------------------------|---------------|---------|-----------------------|
| Protein (TN x 6.41*) (% dry basis) | 89.0 Min | 90.0 | Kjeldahl |
| Total Nitrogen (% TN) | 13.0 Min | 14.0 | Kjeldahl |
| Moisture (%) | 6.0 Max | 5.0 | Oven |
| Fat (%) | 1.5 Max | 1.3 | NIR |
| Ash (%) | 4.0 Max | 3.0 | Furnace 550°C |
| Lactose (%) | 1.0 Max | 0.8 | HPLC / Sub Contracted |
| pH | 6.0 Min | 6.4 | 10% Aq Soln |

* Kjeldahl Factor adjusted for changes in Nitrogen : Protein ratio due to the degree of hydrolysis

| Microbiological | | | |
|----------------------------|--------------------|--------------------|------------------|
| Standard Plate Count (SPC) | 50,000 / g Max | <10,000 / g Max | ISO 4833:2003 |
| Enterobacteriaceae | <10 / g | <10 / g | ISO 21528:2004 |
| E.coli | <10 / g | <10 / g | ISO 16649-2:2001 |
| Staph. aureus | <10 / g | <10 / g | ISO 6888:2003 |
| Salmonella | Not Detected / 25g | Not Detected / 25g | ISO 6579:2002 |
| Yeast & Moulds | 50 / g Max | <10 / g | ISO 6611:2004 |

| Physical | | | |
|--------------------|---------------------------------|--------|-------------------|
| Scorched Particles | Disc B or better | Disc A | ADPI Bulletin 916 |
| Bulk Density | 0.40 ± 0.10 g/cc | 0.40 | IDF134:1996 |
| Appearance | Homogenous, free-flowing powder | | Visual |
| Colour | Creamy white | | Visual |
| Organoleptic | Typical, free from off-flavour | | Taste |

| Mineral Profile | | | |
|-----------------------|-----------|-----|--------------------------|
| Calcium (mg/100g) | 400 - 600 | 500 | ICP (Ref: ISO13804:2013) |
| Sodium (mg/100g) | 120 - 250 | 170 | ICP (Ref: ISO13804:2013) |
| Potassium (mg/100g) | 400 - 600 | 500 | ICP (Ref: ISO13804:2013) |
| Magnesium (mg/100g) | 50 - 120 | 60 | ICP (Ref: ISO13804:2013) |
| Phosphorous (mg/100g) | 100 - 300 | 200 | ICP (Ref: ISO13804:2013) |
| Chloride (mg/100g) | <50 | <50 | Titration |

| Hydrolysis Characteristics | | | |
|----------------------------|----------------|-------------|-------------|
| Degree of Hydrolysis (%) | 4.0 ± 2 | 4.0 | TNBS Assay |
| AN/TN (%) | 6.0 - 12.0 | 9.2 | Calculated |
| Molecular Weight Profile | >10,000 | Daltons (%) | 72 |
| | 5,000 - 10,000 | Daltons (%) | 3 |
| | 2,000 - 5,000 | Daltons (%) | 4 |
| | 1,000 - 2,000 | Daltons (%) | 3 |
| | 500 - 1,000 | Daltons (%) | 4 |
| | <500 | Daltons (%) | 14 |
| Average Molecular Weight | Daltons | 15,011 | Calculation |

Typical Nutritional Information

| Amino Acid Profile | (g per 100g Powder) | (g per 100g Protein) |
|---|---------------------|----------------------|
| Leucine | 9.87 | 11.17 |
| Isoleucine | 7.26 | 8.21 |
| Valine | 6.62 | 7.49 |
| <i>Total Branched Chain Amino Acids</i> | <i>23.75</i> | <i>26.87</i> |
| Aspartic Acid | 10.6 | 11.99 |
| Glutamic Acid | 18.1 | 20.48 |
| Serine | 4.96 | 5.61 |
| Glycine | 1.51 | 1.71 |
| Histidine | 1.54 | 1.74 |
| Arginine | 1.89 | 2.14 |
| Threonine | 7.07 | 8.00 |
| Alanine | 5.25 | 5.94 |
| Proline | 6.04 | 6.83 |
| Tyrosine | 2.67 | 3.02 |
| Methionine | 2.15 | 2.43 |
| Cystine | 2.37 | 2.68 |
| Phenylalanine | 2.80 | 3.17 |
| Lysine | 9.75 | 11.03 |
| Tryptophan | 1.60 | 1.81 |

Protein Utilisation*

| | |
|-------------------|--------|
| PER | 3.5 |
| BV | 104 |
| PDCAAS | 0.98 |
| Digestibility (%) | 98-100 |

* As per scientific literature

Fatty Acid Profile

| | |
|-----------------------|------|
| Saturates (%) | <0.5 |
| Mono-unsaturates (%) | <0.5 |
| Polyunsaturates (%) | <0.5 |
| Cholesterol (mg/100g) | 5 |

Carbohydrates

| | |
|-------------|-------|
| Lactose (%) | 0.8 |
| Glucose (%) | <0.10 |
| Sucrose (%) | <0.10 |

Energy 372 Kcal / 1557 KJ

Fibre Nil

Diet Suitability

This product is suitable for individuals with the following dietary requirements: Kosher, Halal, Vegetarian, Ovo-Lacto Vegetarian, Coeliac, Diabetic, Nut/Seed free.

This product neither contains nor consists of genetically modified organisms (GMO's) nor is it produced from or contains ingredients produced from GMO's.

Storage

Store under clean, cool, dry conditions not exposed to direct sunlight or strong odours and avoiding direct contact with walls and floors. Recommended shelf life is 36 months.

Packaging

Packed in 20 kg multi-wall paper-sacks with polythene liners. Each sack will be heat sealed. The product will be palletised and shrink wrapped.

Labelling

The following will be printed in large blue writing on white sacks. "Optipep", Manufactured by Carbery Food Ingredients and processor EU number.

Coding

Each sack will be individually coded by an automatic ink jet system to ensure traceability.

Allergen

Refer to bold print in Ingredient Listing.