

# TRADENZ -- New Zealand Trade Development Board Award

For the most systematic team approach, blending technical and marketing skills, for the successful development and launch of a new, quality product in an export market.



## Alacen 895 - Whey Protein Isolate

Whey Producer: Valera NZ Dairy Research Institute, Massey University, New Zealand; Distributor: Valera Products Ltd, USA

- John Begg - Whey Products Manager, WPNZ
- Simon Harrison - Marketing Manager, WPNZ
- Neil Garland - Technical Manager, WPNZ
- Dr Mark Pritchard - Scientist, NZDRI
- Steve Morrison - Technical Manager, Kiwi Co-op Dairies Ltd
- Dr John Ayers, Massey University
- Dr Lee Huffman, NZMP USA
- Ken Keyte, NZMP USA

### Product Description

Alacen 895 is a product that highlights the level of excellence we have come to expect from the New Zealand dairy industry.

This ion-exchange whey protein isolate has applications in the 'acid beverage' market, sports bars, ice cream, confectionery, meat substitutes and egg white replacers.

As well as the US, where sales reached \$1 million in the first six months, markets have been identified in Europe, Japan, Australia and Argentina. By 1999, sales are projected to reach \$15 million.

There was a well-researched, well-managed product development process that was integrated through to its market. And it is a market that is unquestionably set to boom.



Category Winner: Industrial Products

**Major Award**

# Whey Protein Isolate 895

Instantised

PRODUCT BULLETIN

PB.024 (SS1)  
Version 2.1004

NZMP Whey Protein Isolate 895 (also known as ALACEN™ 895) from Fonterra is an instantised whey protein isolate manufactured by ion exchange and ultra-filtration (UF). NZMP Whey Protein Isolate 895 is an undenatured, soluble whey protein with excellent dispersibility and solubility combined with excellent nutritive value. NZMP Whey Protein Isolate 895 is ideal for nutritional beverage powders that require spoon stirring.

## PRODUCT CHARACTERISTICS

- Excellent nutritional value
- PDCAAS score of 1.00
- Excellent dispersibility and solubility
- Low lactose, low fat and low cholesterol
- Clean flavour
- Soluble over a wide pH range

## SUGGESTED USES

- Nutritional powdered beverages

## PACKAGING

Multi-wall paper that incorporates a moisture barrier and contains the product within an inner polyethylene bag. No staples or metal fasteners are used.

Net Weight	20.0 kg
Gross Weight	20.4 kg

## STORAGE AND HANDLING

Whey Protein Isolates are hygroscopic and can absorb odours. Therefore adequate protection is essential. It is recommended that product is stored at temperatures below 25°C, relative humidity below 65% and in an odour free environment. Stocks should be used in rotation preferably within 24 months of manufacture.

The analysis results listed in this product bulletin are typical. Refer to the selling specification for minimum & maximum limits by parameter.

## TYPICAL COMPOSITIONAL ANALYSIS

Protein (N x 6.38) (g/100g)	92.4
Moisture (g/100g)	4.5
Fat (g/100g)	1.0
Total Carbohydrate (g/100g)	0.5
Ash (g/100g)	1.6
Inhibitory substances (IU/ml)	<0.005

## TYPICAL NUTRITIONAL ANALYSIS

Energy (kJ/100g)	1,620
Calories (kcal/100g)	385
Energy from fat (kJ/100g)	37
Calories from fat (kcal/100g)	9
Total Sugars (lactose) (g/100g)	0.5
Fibre (g/100g)	0
Cholesterol (mg/100g)	15
Saturated fat (g/100g)	0.6
Trans fat (g/100g)	0.07
Vitamin A (µg/100g)	<3
Vitamin A (IU/100g)	<10
Vitamin C (mg/100g)	<0.4
Iron (mg/100g)	0.4
Sodium (mg/100g)	593
Calcium (mg/100g)	85



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# Whey Protein Isolate 895

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## TYPICAL PHYSICAL PROPERTIES

Colour	White to light cream
Flavour	Clean
pH(5% at 20°C)	6.8
Bulk density (packed, g/mL)	0.39
Scorched particles (50g)	Disc A

## TYPICAL MICROBIOLOGICAL ANALYSIS

Aerobic Plate Count (cfu/g)	<10,000
Coliforms (cfu/g)	<1
E. coli (/g)	Not Detected
Yeast & mould (cfu/g)	<10
Staph. coag. pos. (/g)	Not Detected
Salmonella (750g)	Absent
Listeria (25g)	Absent

## QUALITY ASSURANCE

Strict quality control procedures are enforced during manufacture. The manufacturing environment is also subject to regular monitoring and control.

Final product is sampled and tested for chemical, sensory and microbial parameters using internationally recognised procedures.

During storage and shipment, precautions are taken to ensure that the product quality is maintained. Each package is identified, enabling traceback.

## COMPLIANCE

- Halal

## SUGGESTED LABELLING

<b>Whey Protein Isolate, Soy lecithin.</b>
Allergens: Contains Milk and Dairy products, Soy.

Country regulations for product labelling vary. Fonterra advises customers that they need to check local regulations to determine the correct labelling of this ingredient.



# Typical Mineral Profile

## Whey Protein Isolate 895

NUTRITION BULLETIN

NB 069  
Version: 2. 1006

The typical value is an average of representative samples taken from across the manufacturing season.

MINERAL	TYPICAL AMOUNT PER 100GM OF PRODUCT
Sodium	600 mg
Calcium	89 mg
Potassium	79 mg
Inorganic Phosphate	<50 mg
Total Phosphorous	36 mg
Magnesium	10 mg
Chloride	38 mg
Zinc	0.1 mg
Iron	0.4 mg
Copper	0.03 mg
Iodine	0.02 mg
Manganese	0.01 mg
Aluminium	0.03 mg
Cadmium	0.0005 mg
Selenium	0.02 mg
Sulphur	1430 mg



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# Typical Amino Acid Profile

## Whey Protein Isolate 895

NUTRITION BULLETIN

NB 071  
Version 2, 1006

The typical value is an average of representative samples taken from across the manufacturing season.

AMINO ACID	TYPICAL AMOUNT PER 100GM OF PROTEIN
<b>ESSENTIAL AMINO ACIDS</b>	
Isoleucine	6.2 g
Leucine	14.0 g
Lysine	11.1 g
Methionine	2.9 g
Phenylalanine	3.8 g
Threonine	5.0 g
Tryptophan	2.4 g
Valine	5.7 g
<b>NON-ESSENTIAL AMINO ACIDS</b>	
Histidine (essential for infants)	2.1 g
Alanine	5.9 g
Arginine	2.8 g
Aspartic acid	11.6 g
Cysteine/cystine	3.8 g
Glutamic acid	18.2 g
Glycine	1.8 g
Proline	4.6 g
Serine	3.9 g
Tyrosine	4.2 g



**Dairy for life**

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# Typical Protein Profile

Whey Protein Isolate 895

NUTRITION BULLETIN

NB. 081  
Version 1.1006

The typical value is an average of representative samples taken from across the manufacturing season.

PROTEIN COMPOSITION	TYPICAL AMOUNT PER 100GM OF PRODUCT
$\alpha$ - Lactalbumin	14.2 g
$\beta$ - Lactoglobulin	69.2 g
Glycomacropeptide	1.6 g
Immunoglobulin G	2.1 g
Bovine Serum Albumin	3.3 g
Proteose Peptone 5	1.2 g



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Chicago Sweeteners

3 April 2006

**To Whom It May Concern**

Fonterra advises that to the best of its knowledge and having made reasonable enquiries the presence / absence of allergens in material number 103673, NZMP Whey Protein Isolate 896, is as follows:

ALLERGEN (Raw materials and/or products thereof)	Direct Mixing <sup>i</sup>		Raw material(s) in which Allergen is present.	Identified Potential For Cross Contamination <sup>ii</sup>					
	Allergen absent from the formula and the raw materials used in the formula			Allergen absent on production site <sup>iii</sup>		Allergen absent on production line <sup>iv</sup>		Allergen Cross Contamination Controls in place	
	YES	NO		YES	NO	YES	NO	YES	NO
Milk (including lactose)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	product is made from bovine milk	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cereals containing gluten <sup>v</sup> If No, specify type:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Crustaceans / Shellfish	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Eggs	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fish	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Peanuts	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Soybeans	<input type="checkbox"/>	<input checked="" type="checkbox"/>	product instantised with soy based lecithin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Nuts <sup>vi</sup> If No, specify type:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Celery	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mustard	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sesame seeds	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sulphur dioxides and sulphites at concentrations of more than 10mg/kg or 10mg/L expressed as SO <sub>2</sub>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

ALLERGEN (Raw materials and/or products thereof)	Direct Mixing <sup>I</sup>		Identified Potential For Cross Contamination <sup>II</sup>						
	Allergen absent from the formula and the raw materials used in the formula		Raw material(s) in which Allergen is present.	Allergen absent on production site <sup>III</sup>		Allergen absent on production line <sup>IV</sup>		Allergen Cross Contamination Controls In place	
	YES	NO		YES	NO	YES	NO	YES	NO
<i>For Australia</i> Bee products and products thereof <sup>VII</sup> If No, specify type:	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<sup>I</sup> Allergen added directly as an ingredient or processing aid or known to be otherwise incorporated into the product.

<sup>II</sup> Allergens potentially present in low levels due to carry-over or cross contamination.

<sup>III</sup> Production site is defined as all facilities within the site perimeter fence where:

- ingredients and processing aids are stored
- ingredients and processing aids are processed (i.e. handled, weighed, batched, reconstituted, added, etc)
- milk and milk products are received, stored, separated, and standardised
- the product is manufactured, processed, or packed
- the product is stored between manufacture and despatch

but excludes:

- cafeterias, and other staff facilities detached from the production facility
- all non production facilities on the site (i.e. engineering workshops, services facilities, offices, etc)
- operator control rooms or offices within the production facility in question where eating is permitted, provided there are appropriate hand washing controls after eating.
- other completely separated processing and storage facilities on the same site. These have no allergen impact on the product in question.

<sup>IV</sup> Production line is defined as:

All batching, processing, and packaging equipment from where raw materials are removed from sealed packaging to where finished product packaging is sealed. This includes bulk ingredient transportation where controlled by Fonterra; such as raw milk, milk components, liquid ingredients, bulk dry ingredients.

<sup>V</sup> Cereals containing Gluten i.e. wheat, barley, rye, oats, spelt, Kamut and all their hybrid strains.

<sup>VI</sup> Almonds (*Amygdalus communis L*), hazelnuts (*Corylus avellana*), Walnuts, (*Juglans regia*), Pistachios (*Pistacia vera*), Pecan nuts (*Carya illinoensis (Wangenh.) K.Koch*), Cashew nuts (*Anacardium occidentale*), Brazil nuts (*Bertholletia excelsa*), Macadamia nuts and Queensland nuts (*Macadamia ternifolia*).

<sup>VII</sup> Bee pollen, Propolis or Royal Jelly

Signed



Hamish McCook  
 Supply Chain Co-ordinator  
 Fonterra Co-operative Group Limited