



Experience
the difference.

NZMP SureProtein™ Portfolio.





It starts at the source Fonterra.

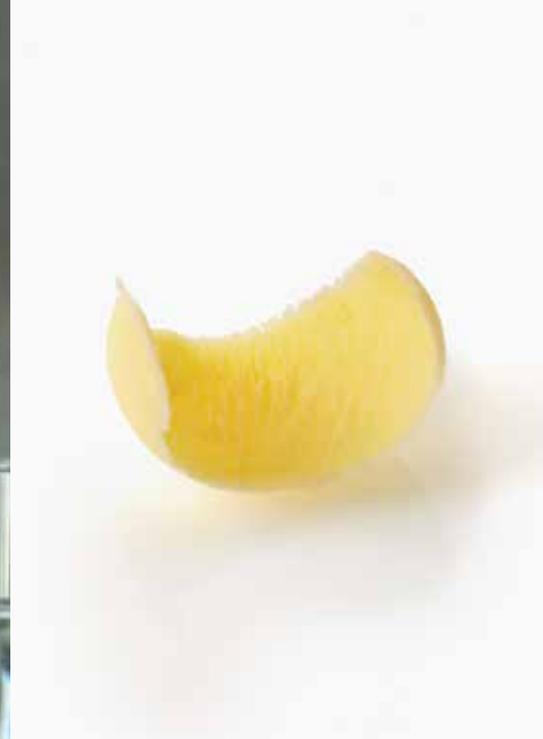
From humble beginnings more than a century ago, Fonterra is now the world's largest dairy exporter, sharing the natural goodness of dairy with 140 countries around the globe.



With generations of experience, our farmers know how to make the world's best milk, and we work together to deliver nature's best to people all over the world.

We're a co-operative owned by 10,500 New Zealand farming families, supported by more than 20,000 Fonterra employees internationally. We're united by a fundamental belief in the power of dairy to make a difference.

From our farms to your door, we take great care to protect the nourishing goodness of milk – from how the grass is grown and how the cows are raised, to how our ingredients are made. As a land of open spaces and plenty of grass, New Zealand is the ideal place to produce high-quality milk. Fertile soil, moderate temperatures and excellent rainfall all help New Zealand farmers grow the lush green grass perfect for milk production.



Unmatched ingredients.

The greatest food and nutrition brands are built from the best ingredients. NZMP is Fonterra's global brand of ingredients; providing one of the broadest ingredient offerings worldwide.

93%

93% of the NZMP ingredients we make contains milk sourced from the green pastures of New Zealand.



This portfolio strength gives you more flexibility to fine-tune your ingredient selection, whether it's from core ingredients such as milk powders and butter, or quality proteins and specialty solutions for advanced nutrition.

Pasture Raised in New Zealand

Our farmers in New Zealand use some of the most advanced pasture-based farming systems in the world – enabling us to produce dairy products with less impact on natural resources. Our cows graze naturally on open fields, with access to lush pastures and clean drinking water.

20,000

More than 20,000 tests are conducted every day during our main processing period as part of the Fonterra Quality System.



Safety and Quality

Food safety and quality is paramount. 100% of our ingredients are packed within anti-counterfeit and tamper-evident packaging.

126

We have 126 product classes organised into five product families, all under one brand – NZMP.



Superior Product Performance

Year after year, independent customer benchmarking rates our product performance ahead of competitors (index 105 vs competitors*).

We are the protein experts.

For generations we have been leading the world in dairy innovation. We produce a range of natural protein ingredients from milk that are tailored to the needs of our customers.

Through careful engineering, milk and whey proteins can be used to create products with the clean taste, mouth-feel, texture and nutrition consumers want.





NZMP SureProtein™ Portfolio.

We have the broadest range of protein ingredients, available globally.

CASEIN

Acid casein is produced by the controlled acidification of pure, pasteurized skim milk to pH 4.6. Acidification is achieved by the addition of a mineral acid or lactic fermentation.

Rennet casein is produced by the controlled precipitation of casein from pure, pasteurized skim milk by coagulation with a microbial rennet enzyme.

CASEINATE

Caseinates are made from acid casein. Variants include sodium, calcium and potassium or combinations of these.

High in protein, caseinates can offer slower release of amino acids and are more soluble than caseins.

TOTAL MILK PROTEIN

We use a proprietary process that isolates both casein and whey from skim milk, and also delivers the functional performance of caseinate. Total milk proteins have the combined nutritional value from both casein and whey proteins.

MILK PROTEIN CONCENTRATES AND MILK PROTEIN ISOLATES

Milk protein concentrates and milk protein isolates are manufactured by membrane filtration through which dairy proteins are isolated from fresh skim milk. They are rich in bound calcium, have excellent heat stability and emulsifying properties, and a natural milk flavour.

WHEY PROTEIN CONCENTRATES

Whey protein concentrates are highly functional and nutritional ingredients, manufactured from fresh whey by membrane filtration processes.

WHEY PROTEIN ISOLATES

Whey protein isolates are the purest form of concentrated whey protein with greater than 90 percent proteins. They are low in fat, lactose and minerals. As well as being highly nutritious, they are extremely functional.

DAIRY PROTEIN CRISPS

Dairy protein crisps are a crispy, crunchy, protein ingredient made from whey protein. They are available in a range of protein levels up to 60 percent protein.

HYDROLYSATES

Hydrolysates are manufactured from milk protein powders by enzymatic hydrolysis where protein chains are broken down into smaller component peptides and amino acids while maintaining the nutritional value of the original material.



SureProtein™ Ingredients for Bars.

Demand for snack and nutrition bars – whether for sports, meal replacement or as a healthy snacking option – continues to grow rapidly. Fonterra produces ingredients for bars with the nutritional advantages of dairy, combined with leading functionality, texture and flavour to meet consumer needs for their busy and active lifestyles.

Today's consumers are becoming even more demanding when it comes to making purchasing decisions from the increasing range of protein bars available. More than anything else, the decision to purchase comes down to one thing – the taste experience. To meet this need, Fonterra offers NZMP SureProtein™, a range of protein ingredients that offer improved taste and superior functionality in today's protein bars. SureProtein™ has a variety of applications from high-protein sports bars to balanced nutrition bars.



The ingredients we recommend for bars include:

SUREPROTEIN™ FLEX 515 WHEY PROTEIN CONCENTRATE (WPC) – 80% PROTEIN

Optimized especially for sports, nutrition, and weight management bars, WPC515 is the next generation of whey protein concentrate powder. This breakthrough ingredient permits high levels of whey protein in bars and snacks, delivering a superior taste and texture at a lower cost-in-use compared to existing dairy ingredients. WPC515 is less chewy than standard whey ingredients and provides the bar softening qualities of whey protein hydrolysates without the associated flavour issues.

SUREPROTEIN™ 4857 MILK PROTEIN CONCENTRATE (MPC) – 80% PROTEIN

MPC4857 is a new stabilised milk protein concentrate that delivers excellent flavour and texture stability. MPC4857 provides a similar initial texture to calcium caseinate but doesn't harden to the same extent over time.

SUREPROTEIN™ 510 WHEY PROTEIN CONCENTRATE (WPC) - 80% PROTEIN

Specifically optimised for use in protein bar applications, this specialised functional whey protein ingredient is inert and will not bind water or increase viscosity. With bland flavour and excellent nutritional properties this ingredient delivers the superior functionality required for quality nutrition bars. This ingredient is not available in the US market.

SUREPROTEIN™ 4861 MILK PROTEIN CONCENTRATE (MPC) – 80% PROTEIN

MPC4861 is an innovative texture-building milk protein concentrate that delivers excellent flavour and texture stability. This proprietary ingredient makes soft bar dough more manageable without causing issues with hardening.

SUREPROTEIN™ 600 DAIRY PROTEIN CRISP (DPC) – 60% PROTEIN

DPC600 have all the benefits of whey protein delivered with a crunchy texture and clean flavour.

SUREPROTEIN™ 392 WHEY PROTEIN CONCENTRATE (WPC) – 80% PROTEIN

WPC392 delivers smooth, chewy bar texture.

SUREPROTEIN™ 380 CALCIUM CASEINATE (CACAS) – 90% PROTEIN

CACAS380 provides good processability and a short bar texture.

SUREPROTEIN™ 911 WHEY PROTEIN HYDROLYSATE (WPH) – 90% PROTEIN

WPH911 is lightly hydrolysed and delivers a softer bar texture.

SUREPROTEIN™ 1104 TOTAL MILK PROTEIN (TMP) – 90% PROTEIN

TMP1104 is a texture building milk protein isolate with a clean flavour that makes soft bar dough more manageable. The following TMP ingredients are also suitable for bar applications; 1100, 1104, 1220/1350, 1180

SureProtein™ Ingredients for Beverages.

The world's most popular format for on-the-go foods is beverages. Demand for waters, sports drinks, energy drinks and functional beverages, such as satiety waters, continue to be the strongest part of the category. Fonterra's key strategy is to provide ingredient solutions that allow formulators to include the benefits of quality protein into great tasting everyday foods. We produce ingredients for beverages that combine the nutritional advantages of dairy with the world-leading flavour and function for consumers who are busy, active and healthy.

While the nutrition and health benefits have to be robust, the final decision for repeat purchase still comes down to taste. Fonterra's wide range of NZMP SureProtein™ ingredients is class-leading in both clear, fruity, acidic beverages, and milky, smooth meal replacers.

The ingredients we recommend for different beverage formats include:

RTD CLEAR BEVERAGES

SUREPROTEIN™ CLEAR 8855 WHEY PROTEIN ISOLATE (WPI) – 90% PROTEIN

This breakthrough ingredient for ready-to-drink beverages is best-in-class with neutral flavour and the highest clarity and stability in acidic beverages (pH<3.7) vs other WPI ingredients. This ingredient is low in lactose and has zero fat and will deliver a product that you will never believe contains protein, allowing you to use at elevated protein levels or in mainstream consumer products.

SUREPROTEIN™ CLEAR 895 WHEY PROTEIN ISOLATE (WPI) – 90% PROTEIN

As with WPI8855, this ingredient has a very good neutral flavour, good clarity and stability in acidic beverages (pH<3.7) with excellent nutritional value. It is also low lactose, with zero fat.

*The above mentioned products are also suitable for powdered beverage applications

SUREPROTEIN™ INGREDIENTS FOR POWDERED BEVERAGES

SUREPROTEIN™ CLEAR 8899 WHEY PROTEIN ISOLATE (WPI) – 90% PROTEIN

WPI8899 has excellent nutritional value, good acid-heat and process stability, and good solubility at acidic pH. This makes for a versatile ingredient, suitable for a range of acidic applications whilst being easy to handle and process. It also delivers exceptional flavour.

SUREPROTEIN™ CLEAR 894 WHEY PROTEIN ISOLATE (WPI) – 90% PROTEIN

Low in fat, this whey protein isolate features good neutral flavour, excellent nutritional value and low lactose content. Also available in an instantised version.

SUREPROTEIN™ 450 INSTANTISED WHEY PROTEIN CONCENTRATE (WPC) – 80% PROTEIN

Soluble over a wide pH range, this whey protein concentrate has excellent dispersibility and translucency, an excellent nutritional profile, improved handling properties and low viscosity.

SUREPROTEIN™ 180 SODIUM CASEINATE (NACAS) – 90% PROTEIN

Ideally suited for use in flavour sensitive formulations due to its bland flavour, this sodium caseinate is a versatile ingredient with very good functionality.

SUREPROTEIN™ 470 MILK PROTEIN CONCENTRATE (MPC) – 70% PROTEIN

This milk protein concentrate has excellent heat stability, high nutritional quality and is a good source of milk calcium and has high opacity in water with good dispersibility.

SUREPROTEIN™ 385 CALCIUM CASEINATE (CACAS) – 90% PROTEIN

Highlighted by a smooth mouth feel, this calcium caseinate has excellent dispersibility, emulsification and suspension stability. It has a very good nutritional value, high calcium, low sodium content and high opacity in water. The following CACAS ingredients are also suitable for powdered beverage applications; 220, 225-I, 391.

SUREPROTEIN™ 4850 MILK PROTEIN CONCENTRATE (MPC) – 80% PROTEIN

This ingredient has high protein content, excellent nutritional value and clean milky flavour making it an ideal ingredient for nutritional products. Also available as MPC4851 low lactose version.

SUREPROTEIN™ 4900 MILK PROTEIN ISOLATE (MPI) – 90% PROTEIN

An ideal ingredient for nutritional products, this milk protein isolate has excellent heat stability, a milky flavour, high nutritional value and high opacity in water.

SureProtein™ Ingredients for Beverages.

RTD NUTRITIONAL BEVERAGES

SUREPROTEIN™ VITAL 550 WHEY PROTEIN CONCENTRATE (WPC) – 80% PROTEIN

This ingredient sets the benchmark in functional whey proteins, specially formulated to enable the delivery of high protein levels into nutritional beverage applications which cannot be reached using other types of whey protein ingredients. WPC550 has excellent heat stability, is easy for manufacturers to process into end applications, delivers low viscosity and has high nutritional quality.

SUREPROTEIN™ 4857 MILK PROTEIN CONCENTRATE (MPC) – 80% PROTEIN

Features of this ingredient include good heat stability and high nutritional value, delivering a clean milky flavour.

SUREPROTEIN™ 4861 MILK PROTEIN CONCENTRATE (MPC) – 80% PROTEIN

Features of this milk protein concentrate include good cold solubility, good flavour, very good heat stability, moderate aeration stability. It is also a good source of milk calcium.

SUREPROTEIN™ 4900 MILK PROTEIN ISOLATE (MPI) – 90% PROTEIN

Ideally suited for enteral or dietetic beverages, this milk protein isolate has an excellent neutral flavour profile and is an excellent source of milk calcium. Other benefits include low lactose content, good heat stability, excellent nutritional value and high opacity in water.

SUREPROTEIN™ 4862 MILK PROTEIN CONCENTRATE (MPC) – 80% PROTEIN

Features of this milk protein concentrate include good cold solubility, very good heat stability and moderate aeration stability. It is also a good source of milk calcium.

SUREPROTEIN™ 485 MILK PROTEIN CONCENTRATE (MPC) – 85% PROTEIN

Also suitable for enteral or dietetic beverages, this milk protein concentrate has a neutral flavour profile, good heat stability and dispersibility, high nutritional value and high opacity in water. It is also an excellent source of milk calcium and available as low spore (4854) and low heat (4801) versions.

SUREPROTEIN™ 4882 MILK PROTEIN CONCENTRATE (MPC) – 80% PROTEIN

This milk protein concentrate has a range of superior functional properties, high nutritional value and clean flavour profile, ideal for nutritional beverage applications maintaining a low viscosity over shelf life.

SUREPROTEIN™ 470 MILK PROTEIN CONCENTRATE (MPC) – 70% PROTEIN

This milk protein concentrate combines excellent flavour and heat stability with high nutritional value and opacity in water. It has good dispersibility and is an excellent source of milk calcium.

SUREPROTEIN™ 472 WHEY PROTEIN CONCENTRATE (WPC) – 80% PROTEIN

Made out of rennet and suitable for retort and UHT beverages, highlights of this whey protein concentrate include excellent dispersibility, solubility over a wide pH range, excellent nutritional profile and low viscosity.

SUREPROTEIN™ 392 WHEY PROTEIN CONCENTRATE (WPC) – 80% PROTEIN

Also suitable for retort and UHT beverages, this whey protein concentrate has good emulsifying capability and is soluble over a wide pH range with good viscosity control and excellent nutritional value.

SUREPROTEIN™ 917 WHEY PROTEIN HYDROLYSATE (WPH) – 90% PROTEIN

Suitable for enteral products with enhanced protein with a 5.0 percent degree of hydrolysis, this whey protein hydrolysate has excellent nutritional value, very good emulsification properties, reduced allergenicity, good solubility, low lactose and low ash, and is halal/kosher certified.

SUREPROTEIN™ 957 WHEY PROTEIN HYDROLYSATE (WPH) – 80% PROTEIN

Currently under development, this mildly hydrolysed whey protein has been specifically designed for use in RTD beverage applications delivering great flavour.

SUREPROTEIN™ 456 MILK PROTEIN CONCENTRATE (MPC) – 56% PROTEIN

This milk protein concentrate is known for its fresh milk flavour profile with very good dispersibility, solubility, high nutritional quality and high opacity.

SUREPROTEIN™ 4420 MILK PROTEIN CONCENTRATE (MPC) – 43% PROTEIN

Excellent dispersibility highlights this milk protein concentrate, along with good solubility, heat stability, high opacity in water, fresh milk flavour profile and high nutritional quality.

SUREPROTEIN™ 380 CALCIUM CASEINATE (CACAS) – 90% PROTEIN

This calcium caseinate includes a high nutritional value, good emulsification, high calcium, low sodium content and high opacity in water. The following CACAS ingredients are also suitable for RTD beverage applications; 309, 220, 250.

SUREPROTEIN™ 180 SODIUM CASEINATE (NACAS) – 90% PROTEIN

This sodium caseinate includes low viscosity, very good whipping properties, excellent foam stability, very good emulsifying properties and excellent water solubility. The following NACAS ingredients are also suitable for RTD beverage applications; 166, 167, 4100.

SUREPROTEIN™ 720 ACID CASEIN (ACAS) – 90% PROTEIN

A versatile granular milk protein with good flavour, heat stability and nutritional value.

SureProtein™ Ingredients for Yoghurts.

The global cultured food market is one of the fastest growing dairy segments. As a world leader in dairy innovation, we use our in-depth understanding of fundamental dairy science and yoghurt systems to optimise our ingredients and deliver superior texture and taste for Greek, stirred, drinking and pot-set yoghurts.

Today high protein, low fat yoghurt systems are the fastest growing product segment in the global cultured category. Our SureProtein™ solutions give our customers the ability to formulate up to 10% protein Greek-style, stirred spoonable or drinking yoghurts with low astringency or sourness.



The ingredients we recommend for yoghurts and cultured applications include:

SUREPROTEIN™ MILK PROTEIN CONCENTRATE (MPC) 4424 – 44% PROTEIN

An ideal ingredient for providing a creamy mouthfeel in a yoghurt that contains dairy fat.

SUREPROTEIN™ 470 MILK PROTEIN CONCENTRATE (MPC) – 70% PROTEIN

This milk protein concentrate combines excellent flavour and heat stability with high nutritional value and opacity in water. It has good dispersibility and is an excellent source of milk calcium.

SUREPROTEIN™ MILK PROTEIN CONCENTRATE (MPC) 4761 – 70% PROTEIN

Optimized for yoghurt systems with 3-7% protein content, this patented ingredient provides great flavour and thick creamy texture in Greek-style yoghurts.

SUREPROTEIN™ MILK PROTEIN CONCENTRATE (MPC) 4766 – 70% PROTEIN

Optimized for yoghurt systems with 3-5% protein content, this ingredient provides great flavour and thick creamy texture in Greek-style yoghurts, and also helps to reduce syneresis over shelf life.

SUREPROTEIN™ 4861 MILK PROTEIN CONCENTRATE (MPC) – 80% PROTEIN

Optimized for yoghurt systems with 3-7% protein content, this ingredient provides great flavour and thick creamy texture in Greek-style yoghurts.

SUREPROTEIN™ 4862 MILK PROTEIN CONCENTRATE (MPC) – 80% PROTEIN

Optimised for yoghurt systems with 3-7% protein content, this ingredient provides a thick creamy texture in Greek-style yoghurts. Features of this milk protein concentrate include good cold solubility, great flavour, very good heat stability.

SUREPROTEIN™ MILK PROTEIN CONCENTRATE (MPC) 4867 – 80% PROTEIN

Optimized for yoghurts with over 7% protein content, this unique ingredient provides increased thickness, creamy texture, reduced fermentation time and superior flavour in Greek-style yoghurts.

SUREPROTEIN™ WHEY PROTEIN CONCENTRATE (WPC) 132 & 322 – 80% PROTEIN

These ingredients are ideal for creating a firm elastic gel in set yoghurt, creamy mouth feel in stirred yoghurt, faster fermentation times and reduced syneresis within yoghurt systems.

SUREPROTEIN™ WHEY PROTEIN CONCENTRATE (WPC) 392 – 80% PROTEIN

An ingredient with excellent nutritional and functional properties, WPC392 is particularly suitable for pot set yoghurts where it enables faster fermentation times, reduced syneresis and increased gel strength.

SUREPROTEIN™ FLEX 515 WHEY PROTEIN CONCENTRATE (WPC) – 80% PROTEIN

Used in sports, nutrition, yoghurts and weight management bars, WPC515 is the next generation of whey protein concentrate powder. In yoghurt systems it provides increased protein with reduced viscosity which is particularly useful in the production of high protein drinking yoghurts.

Caseins/Caseinates.

Product Type	Ingredient	Product Description
Mineral Acid Casein	741	>95% protein (dry basis) 10% moisture 30 mesh pure casein (<0.25% lactose). Manufactured using mineral acid precipitation of milk. Must be solubilised with alkali (typically sodium hydroxide) for most applications. Applications are the same as sodium caseinate but product must be solubilised with alkali first.
Lactic Acid Casein	720	>95% protein (dry basis) 12% moisture 30 mesh pure casein (<0.25% lactose). Manufactured from lactic fermentation of milk.
Rennet Casein	771	>89% protein (dry basis) 12% moisture 30 mesh pure casein (<0.25% lactose). Manufactured by rennet type enzyme precipitation of casein in milk. Used for process and analogue cheese, especially for enhanced stretch in pizza cheeses.
	779	90% (fine) version of 771, same applications characterised by faster solubilisation in cheese cookers and particularly well suited for continuous cookers.
Sodium Caseinate >95% protein (dry basis) concentrate with almost no lactose (<0.25%) made by solubilising acid casein curd or powder with sodium hydroxide	180	A highly functional and pure soluble casein protein valued for protein nutrition, excellent heat stability, emulsification, viscosity and whipping properties. Used in medical and sports RTDs, non-dairy creamers, cream liqueurs and whipped toppings and yoghurts. Characteristically translucent in solution.
	185	Slightly coarser less dusty version of 180.
	166	A hydrolysed sodium caseinate offering similar attributes but with low viscosity.
	167	A hydrolysed sodium caseinate offering similar attributes but with medium viscosity.
	4100	A sodium calcium caseinate characterized by excellent dispersibility.
Calcium Caseinate >95% protein (dry basis) concentrate with almost no lactose (<0.25%) made by solubilising acid casein curd or powder with calcium hydroxide	380	A pure soluble casein protein valued for protein nutrition, slow digestibility, good heat stability, low viscosity and milky appearance. Used in medical and sports RTDs and powders, protein bars, cheese and cultured products.
	385	A dispersible version of 380 particularly favoured for use in sports nutrition powders imparts thickness to powdered shake like products dispersed by blender or shaker.
	390	Similar to 385 but coated with sunflower lecithin for when there is a labelling preference.
	309	A reduced spore count version of 380. Also incorporates some sodium hydroxide in the conversion process so slightly higher in sodium. This may provide some added heat stability depending on application.
Other Caseinates >95% protein (dry basis) concentrate with almost no lactose (<0.25%) made by solubilising acid casein curd or powder with mixed alkalis.	250	A calcium caseinate enriched with potassium and magnesium. Good solubility, emulsification and heat stability. Used in nutritional beverages.
	220	A calcium sodium caseinate characterised by excellent dispersibility and favoured for use in powder consumer beverages.

Milk Protein Concentrates & Isolates.

Product Type	Ingredient	Product Description
MPC42	High fat MPC4424	42% protein – high (26%) fat content - excellent alternative to WMP.
MPC56	MPC456	56% protein – ideal for high levels of cheese milk extension and as a SMP replacer.
MPC70	MPC470	70% protein – ideal SMP replacer also great for high protein beverages.
	Functional MPC4761	70% protein – viscosity build in yoghurt, and also useful in UHT beverage applications
	Functional MPC4766	70% protein – extra whey protein content for added stability and creamy texture.
MPC80	MPC480	80% protein (dry basis) similar to MPC 85.
	MPC4856	80% protein (dry basis) similar to MPC 4857.
MPC85	MPC485	85% protein (dry basis) excellent protein for nutritional or milk solids applications.
	Low lactose MPC4851	85% protein (dry basis) with low lactose (<4%) for nutritional applications where reduced or lactose free claims required in final application.
	Functional MPC4861	85% protein (dry basis) high protein MPC with excellent cold water solubility. Excellent in high protein UHT beverages. Moderate viscosity build in yoghurt.
	Functional MPC4862	85% protein (dry basis) high protein MPC cold water soluble, excellent emulsification, improved yoghurt texture, good whipping properties.
	Functional MPC4882	85% protein (dry basis) high protein MPC cold water solubility, excellent flavour, excellent in high protein UHT beverages – maintains low viscosity.
	Functional MPC4867	85% protein (dry basis) high protein MPC, excellent in beverages, culture and cheese foods for functionality and flavour.
	Functional MPC4857	85% protein (dry basis) high protein stabilised MPC, delivers excellent texture in dairy foods particularly for processed cheese. Effective at increasing the protein content of milk based UHT beverages, and excellent protein for milk solid replacement for nutrition bars.
MPI	MPI490	90% protein (dry basis) high protein MPC with very low lactose (<2%) excellent as protein for nutritional beverages.
TMP	TMP1100	95% protein (dry basis) concentrate with almost no lactose (<0.25%) made by co-precipitation and solubilisation of casein and whey in a caseinate like process. Characterized by excellent nutritional value, emulsifying capability, heat stability and water binding properties. Uses include beverages, protein bars and whipped toppings.
	TMP1104, 1220, 1225	Similar to TMP1100 but modified mineral balance and functionality; 1104 enhanced for bar applications, 1220 and 1225 are high calcium and great protein sports powder ingredients.

Whey Protein Concentrates & Isolates.

Product Type	Type	Ingredient	Product Description
WPC80	Mineral Acid	WPC322	80% protein (dry basis) standard mineral acid whey WPC offering. Valued for protein nutrition and functional acid or heat gel applications. Low sodium content.
		WPC132	80% protein (dry basis) gelling mineral acid whey WPC. Preferred for gelling functionality in heat and acid gel applications including cultured dairy, custards, egg substitutes, reformed meats, ham as examples.
		WPC162	Brine gelling. Forms a firm gel, with good water binding properties when heated in the presence of salt. Applications include ham, surimi and other gelled, salted foods.
	Lactic Acid	WPC7009	80% protein (dry basis) standard lactic acid whey WPC offering. Valued for protein nutrition and functional acid or heat gel applications.
	Cheese whey	WPC392	80% protein (dry basis) standard cheese whey WPC offering. Valued for protein nutrition. Useful for egg replacement and texture modification.
		WPC450	80% protein (dry basis) Instantised cheese whey WPC offerings. Coated with sunflower lecithin. Ideal for use in consumer powdered products e.g. sports nutrition
		WPC455	80% protein (dry basis) Instantised cheese whey WPC offerings. Coated with soy lecithin. Ideal for use in consumer powdered products e.g. sports nutrition
	Rennet whey	WPC472	80% protein (dry basis) standard rennet casein whey WPC offering. Valued for protein nutrition and functional properties like emulsification.
		WPC480	80% protein (dry basis) instant rennet casein whey WPC offering. Valued for protein nutrition in dry mix consumer beverages.
	Functional	WPC515	80% protein (dry basis) specialised functional cheese WPC for use in protein bars and high protein yoghurts. Whey protein is inert and will not bind water or increase viscosity.
		WPC510	85% protein (dry basis) specialised functional cheese WPC for use in Protein Bars. Whey protein is inert and will not bind water or increase viscosity. Only available outside of the US market.
		WPC550	80% protein (dry basis) specialised functional cheese WPC for use in sports and calorie dense medical UHT beverages. Whey protein is inert and so not effected by heat.

Product Type	Type	Ingredient	Product Description
WPC85	Mineral acid	WPC163/164	>86% protein (dry basis) specialised high protein super brine tolerant mineral acid gelling WPC. Excellent gelation performance in the presence of salt and at reduced pH, ideal for ham and other gelled, salted foods. Low lactose.
WPI	IX	WPI895	>90% protein (dry basis) WPI made by microfiltration of cheese whey and available both in standard and instantised versions. Valued for protein nutrition. Low fat (0.2%) and low lactose (0.6%). Used in nutritional beverages and bars, whipped toppings and yoghurts.
	MF	WPI894	>90% protein (dry basis) WPI made by microfiltration of cheese whey and available both in standard and instantised versions. Valued for protein nutrition. Low fat (0.2%) and low lactose (1.2%). Used in nutritional beverages and bars and whipped toppings.
	High clarity	WPI8855	>90% protein (dry basis) acidic WPI, higher clarity and improved flavour over other WPI. Low fat (0.1%) and low lactose (0.1%). Ideal for clear acidic RTD sports drinks and functional waters, juices, smoothies, jellies and acidic powdered beverages.
WPPC73	IX breakthrough	WPC352 (IX)	~74% protein (dry basis). This is the high fat WPC (11.5% fat) made using the co-stream from the IX WPI process. Used in acid dairy beverages. Enriched levels of MFGM and complex lipids.
	MF retentate	WPC356 (MF)	~74% protein (dry basis). This is the high fat WPC (11.5% fat) made using the co-stream from the MF WPI process. Used in acid dairy beverages. Enriched levels of MFGM and complex lipids.

Hydrolysates.

Product Type	Ingredient	Product Description
WPH	911	This mildly hydrolysed whey protein has excellent nutritional value with bland flavour, low lactose and low water binding properties. It is ideally suited for bar applications.
	917	Mildly hydrolysed whey protein for comfort with excellent nutritional quality. Very good emulsification properties, good solubility and reduced allergenicity. Low lactose and ash, bland flavour.
	817	Retort stable with good emulsification properties this mildly hydrolysed whey protein is ideal for gel applications, delivering reduced allergenicity, low flavour profile and increased amino acid absorption.
	957	Currently under development, this mildly hydrolysed whey protein has been specifically designed for use in RTD beverage applications delivering great flavour.
	821	With a high degree of hydrolysis this offering has excellent solubility, is low lactose and low fat, and delivers reduced allergenicity and increased amino acid absorption.
MPH	948	A mildly hydrolysed milk protein with high nutritional quality, good emulsification properties, retort stable and low lactose/low fat.

DISCLAIMER: The information in this document is designed to give a brief overview of the nature and characteristics of our ingredients as at the date of preparation. It does not constitute representations or warranties as to such characteristics, the functionality or potential applications of our ingredients and -you must assure yourself of these matters having regard to our detailed product specifications, your specific circumstances and applicable market requirements.

SOURCE: Information contained in this document has been provided by the Fonterra Research and Development Centre and is based on knowledge of typical manufacturing conditions and formulations, and our application expertise.

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Ingredients by 
Dairy for life