



**The value is in
our nature**



Equal balance



Composition of milk



> **12%**
Solids

3.4% Protein

3.7% Fat

4.8% Lactose

0.7% Minerals

2.8% Casein

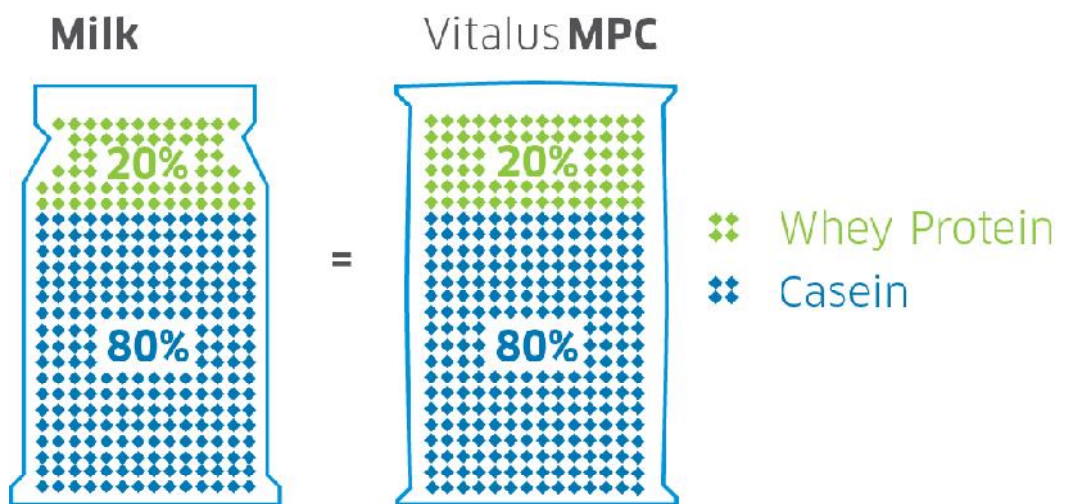
0.6% Whey Protein



Equal balance



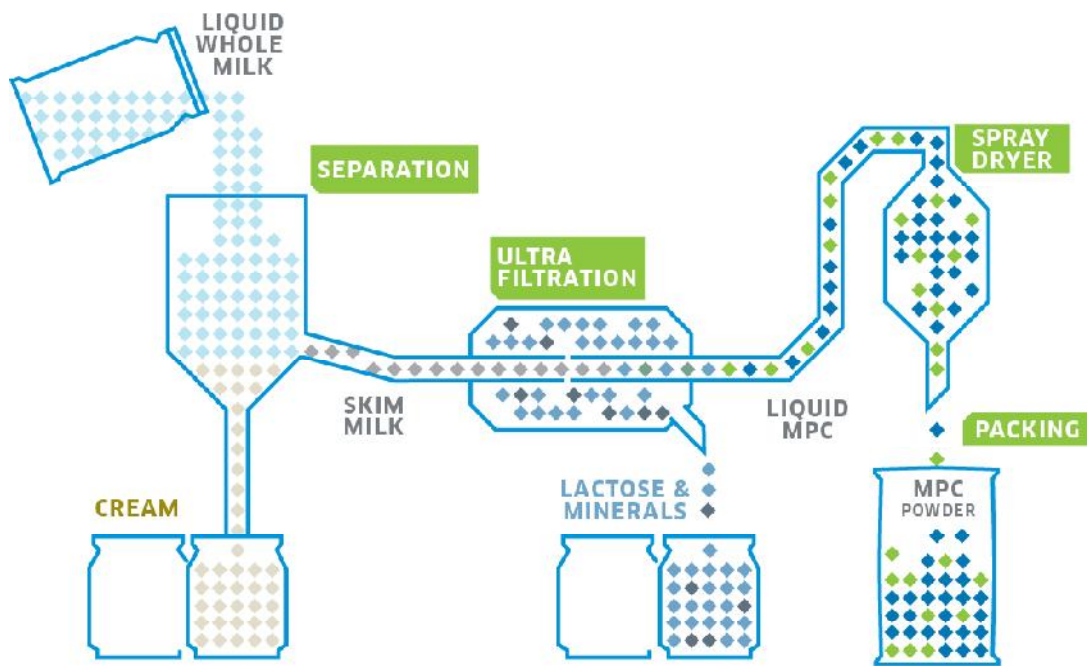
Vitalus MPC proteins are the same as found in milk



Equal balance



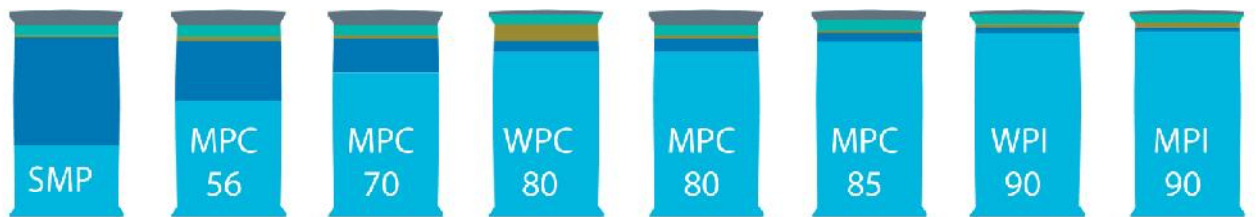
MPC Process



Optimum balance



Our MPC Composition ratios



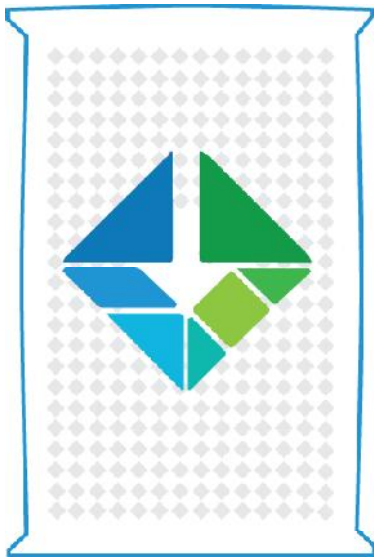
◆ Minerals%	7.8	7.8	7.3	2.0	7.3	5.0	2.0	2.0
◆ Moisture %	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
◆ Fat %	1.0	1.2	1.0	7.0	1.2	1.0	1.0	1.6
◆ Lactose %	53.2	30.0	16.7	6.0	6.5	4.0	2.0	1.4
◆ Protein %	34.0	56.0	70.0	80.0	80.0	85.0	90.0	90.0



Product Portfolio



Leader products



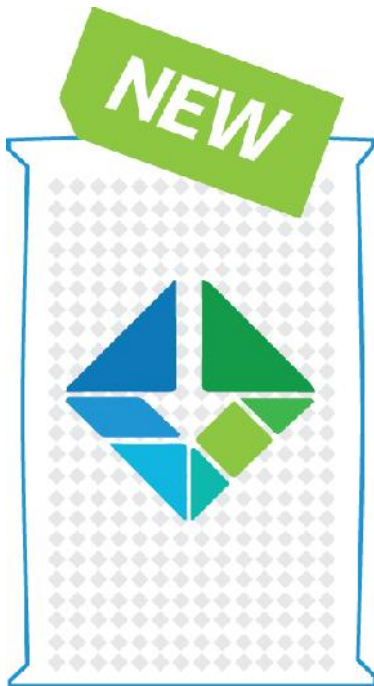
- MPC 70
- MPC 80
- MPC 80 HT
- MPC 85
- MPP



Product Portfolio



Recent Innovations

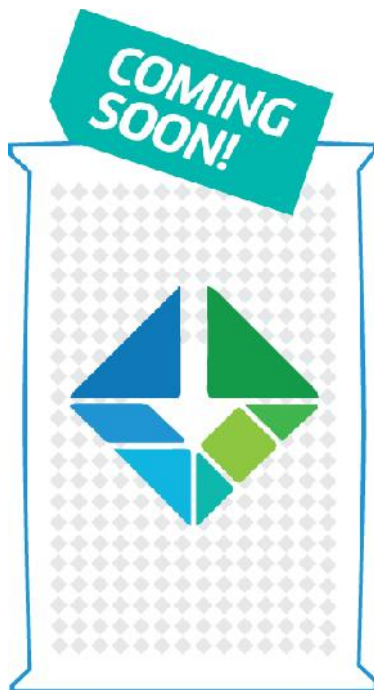


- MPC 85 Low Lactose
- MPC 85 Lactose Free
- MPI 90

Product Portfolio



Future innovations



Highly functional MPC's

- Low ash
- Higher Casein

Prebiotics

- GOS
- Tagatose

MPC applications & functional advantages



Functional

Cheese, yoghurt, frozen desserts



Nutritional

Weight management, clinical



MPC applications & functional advantages



Solubility

Beverages



Emulsification

Soups, bakery, dressings



Nutritional applications for MPC

Main applications include:

- Meal replacement
- Nutritional beverages
- Sports food
- Slimming products
- Clinical Nutrition





Nutritional applications for MPC

Its main functions are:

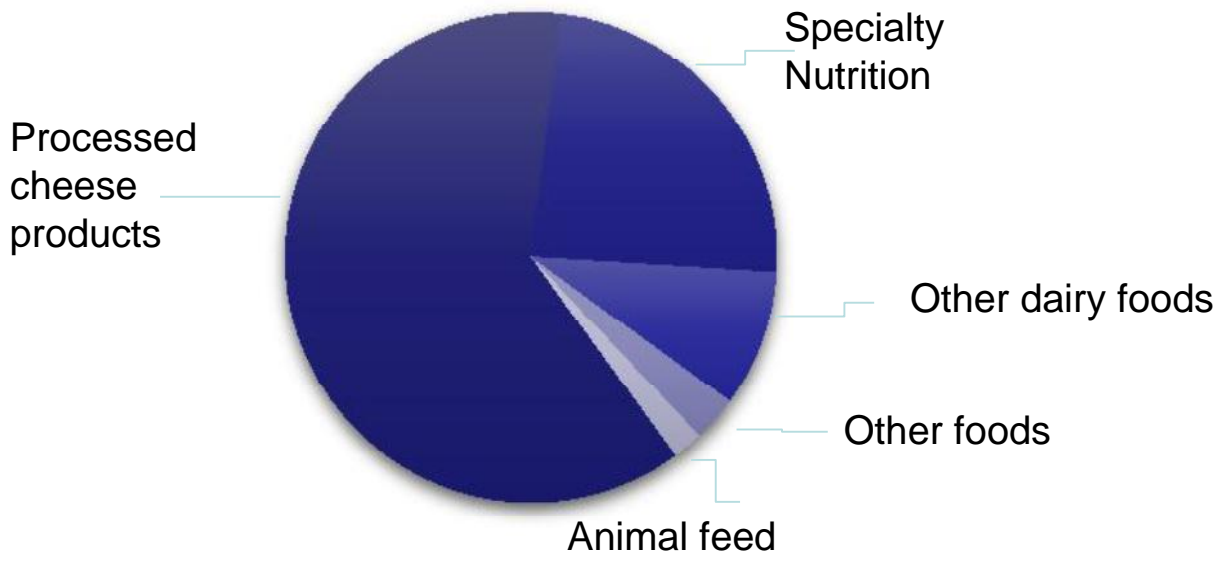
- Nutritional profile
- Solubility in dairy mixes, water binding, opacity, viscosity, emulsification, and mouthfeel
- With obesity an increasing concern, high-quality proteins play
 - enhancing satiety,
 - increasing thermogenesis,
 - decreasing hunger,
 - reducing food intake.



Nutritional applications for MPC



MPC purchases by end-use application, US



Nutritional applications for MPC



Application	Market trends	Technical issues
Sports Nutrition	In this highly competitive field the secret is not just providing nutrient-controlled, dense products, but things that taste good	<ul style="list-style-type: none">•MPC 70, 75, 80 and 85 are used in sports nutrition.•MPC's are used for their AA composition which is more complete. But the taste is a little sandy.•MPC's are used for their positive image essentially, in a lesser extent for their aminogram.





Nutritional applications for MPC

Application	Market trends	Technical issues
Clinical Nutrition	<p>The MPC trend is due to 2 reasons:</p> <ul style="list-style-type: none">• Nutritional: the whey content, 80/20 is beneficial for elderly people or people under surgery who are losing muscle mass,• Functional, the final products are less viscous.	<ul style="list-style-type: none">• MPC 70, 75, 80 and 85 are used in hospital rehabilitation products and aged care products.• For tube feeding it allows the product to flow more rapidly; and for oral nutrition it is more fluid and easier to swallow; it is also preferable due to its taste.



Recent Studies



Studies are emerging which suggest that a protein blend that combines casein, whey protein and soya protein may be better for building muscle post-workout than whey protein alone.

Dr Blake Rasmussen and colleagues from the Department of Nutrition & Metabolism at the University of Texas Medical Branch compared the effect of a protein blend and pure whey protein in a small double-blind, randomised clinical trial in young adults.

The protein blend consisted of 50% casein, 25% isolated whey protein and 25% isolated soya protein.





Recent Studies

Whey, casein and soya proteins are all absorbed at different rates during digestion. Whey protein is referred to as a “fast” protein because it is rapidly absorbed, whereas casein, a “slow” protein, requires several hours to be digested.

“This study showed that protein blends can provide amino acid delivery for up to five hours, meaning if you consume a product or protein shake with these blends, the prolonged effect will deliver essential amino acids to feed your muscles until your next meal.”



Regulatory Standards for Meal Replacements



STANDARD 2.9.3

FORMULATED MEAL REPLACEMENTS AND FORMULATED SUPPLEMENTARY FOODS

Federal Register of Legislative Instruments F2009C00741

- **formulated meal replacement** means a single food or pre-packaged selection of foods that is sold as a replacement for one or more of the daily meals but not as a total diet replacement.

- **formulated supplementary food** means a food specifically designed as a supplement to a normal diet to address situations where intakes of energy and nutrients may not be adequate to meet an individual's requirements.



Regulatory Standards for Meal Replacements



Compositional requirements for formulated meal replacements

- (1) Formulated meal replacements must contain in a serving no less than –
 - (a) 12 g protein; and
 - (b) 850 kJ; and
 - (c) 25 % of the RDI (Recommended Dietary Intake) of each of those vitamins and minerals listed in column 1 of Table 1 in the Schedule.

Compositional requirements for formulated supplementary foods

- (1) Formulated supplementary foods must contain in a serving no less than –
 - (a) 8 g protein; and
 - (b) 550 kJ; and
 - (c) 20 % of the RDI of no less than one of those vitamins or minerals listed in column 1 of Table 3 in the Schedule, provided the total quantity of each vitamin or mineral in a serving does not exceed the quantity, where specified, set out in relation to that vitamin or mineral in column 4 of Table 3



Regulatory Standards for Meal Replacements



CODEX STANDARD FOR FORMULA FOODS FOR USE IN WEIGHT CONTROL DIETS CODEX STAN 181-1991

Nutrient Content

3.2.1 Protein

3.2.1.1 A minimum of 25% and a maximum of 50% of the energy available from the food, when ready-to-serve, shall be derived from its protein content. The total amount of protein shall not exceed 125 g per day.

3.2.1.2 The protein shall be:

- (i) of a nutritional quality equivalent to egg or **milk protein** (the reference protein);
- (ii) where the protein quality is less than the reference protein, the minimum levels should be increased to compensate for the lower protein quality. No protein with a quality of less than 80% of that of the reference protein shall be used in a formula food for use in a weight control diet.



Abbott Nutrition and Nestle – industry leaders



How Abbott and Nestlé describe their commitments to improving human nutrition

Nestlé Nutrition

Baby Development - Our philosophy is that infants and children who acquire good eating habits from the start are laying the foundation for health and wellness throughout life.

Sports Nutrition - Created by athletes for athletes, we combine cutting-edge nutritional science and the spirit of sports in making products that help people perform better.

Weight Management - Our aim is to help overweight people lose weight and keep it off with one-on-one weight management programs offering personalised nutritional and lifestyle support.



Nestle – industry leader



Boost®

Nutritionally complete drink designed to help adults meet their daily nutritional needs so they can maintain strength, functionality and mobility. User validated taste liking promotes compliance to help achieve positive outcomes



Nestle – industry leader



BOOST High Protein Drink provides the nutrition you need to help you be your best with 15 g of protein. Now available as a drink and as a powder, it gives you more than 25% of the daily value for protein in one 8 fl oz serving.



Nestle – industry leader



Resource® Senior Activ

Specifically designed to meet the needs of the older adults being malnourished or at risk of malnutrition, and to help them regain strength.

Nestle – industry leader



Carnation® Breakfast Essentials

Nutritionally complete drinks providing the nutrition of a complete breakfast including twice the protein of an egg and twice the calcium of a glass of milk. A nutritional solution for households with school age children that enables a healthy start to the day on busy week day mornings.



Abbott – industry leader



Complete, Balanced Nutritional Drink
ENSURE nutritional shakes can benefit patients who have malnutrition, are at nutritional risk, or are experiencing involuntary weight loss. For oral use. For interim sole-source nutrition



Abbott – industry leader



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Abbott – industry leader



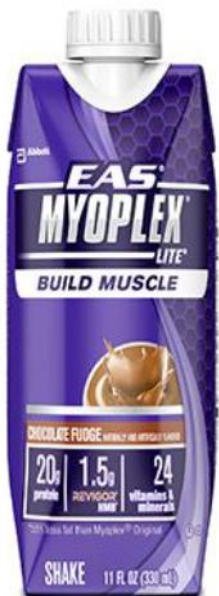
Ingredients [\[1\]](#)

Water, Milk Protein Concentrate, Corn Maltodextrin. Less than 2% of the Following: Calcium Caseinate, Soy Protein Isolate, Sugar (Sucrose), Short-Chain Fructooligosaccharides, High Oleic Safflower Oil, Natural & Artificial Flavor, Magnesium Phosphate, Potassium Citrate, Cellulose Gum, Sodium Ascorbate, Sodium Chloride, Carrageenan, Cellulose Gel, Gellan Gum, Acesulfame Potassium, Sucralose, Zinc Gluconate, dl-Alpha-Tocopheryl Acetate, Niacinamide, Manganese Gluconate, Calcium Pantothenate, Vitamin A Palmitate, Pyridoxine Hydrochloride, Thiamine Chloride Hydrochloride, Riboflavin, Chromium Chloride, Folic Acid, Beta-Carotene, Vitamin D3, Biotin, Sodium Molybdate, Sodium Selenite, Potassium Iodide, Phytonadione, and Cyanocobalamin.

Contains milk and soy ingredients.; Contains Milk Ingredients; Contains Soy Ingredients; Gluten-Free; Kosher Dairy; Not for patients with galactosemia;



Abbott – industry leader



Ingredients

Water, Milk Protein Concentrate, Soy Protein Isolate, Pea Protein Concentrate. Less than 2% of the Following: Corn Maltodextrin, Cocoa Powder (Processed with Alkali), Sugar, Corn Syrup Solids, Vitamin & Mineral Blend (Potassium Phosphate, Potassium Citrate, Sodium Ascorbate, Salt, Magnesium Carbonate, Zinc Gluconate, dl-Alpha-Tocopheryl Acetate, Niacinamide, Manganese Gluconate, Calcium Pantothenate, Vitamin A Palmitate, Pyridoxine Hydrochloride, Thiamine Hydrochloride, Riboflavin, Chromium Chloride, Folic Acid, Beta-carotene, Vitamin D3, Biotin, Sodium Molybdate, Sodium Selenite, Potassium Iodide, Phytonadione, Cyanocobalamin), Short-Chain Fructooligosaccharides, Calcium Beta-Hydroxy-Beta-Methylbutyrate, Natural & Artificial Flavor, High Oleic Sunflower Oil, Cellulose Gum, Cellulose Gel, Acesulfame Potassium, Carrageenan, Gellan Gum, and Sucralose.

Abbott – industry leader



Abbott Nutrition Health Institute

Conducts research conferences among world-wide experts on nutrition-related topics

Conducts symposia at international conferences

Is an accredited provider of continuing education for U.S. dietitians and nurses

Is resource for articles, clinical tools, nutrition guidelines, clinical studies and related sites of interest

Explore these resources at www.ANHI.org



Abbott – industry leader



Resident Learning Center

Abbott Nutrition provides Residents and their program faculty members with this new online training resource. In this learning center Residents will find educational resources and evidence-based programs that will be a major contribution to the field of pediatric education and to the health of children in the United States.

Learn more about the Abbott Nutrition [Resident Learning Center](#).

EAS Academy

The EAS Academy is an objective and trusted provider of high quality scientific and practical nutrition information and educational materials, in a variety of formats, for health and fitness professionals.

Learn more at www.easacademy.org.



Vitalus MPC in nutritional applications



Ideal Protein Canada and US. :

Ideal Protein Provides Dieters with Continuing Education as well as Private and Public Lectures on Weight Loss & Nutrition...



Vitalus MPC in nutritional applications



Kriss-Laure - France



Lipides
Fibres
Oligo-éléments
Vitamines
Glucides
Minéraux
protéines
Complexe bioactif marin



Vitalus MPC in nutritional applications



Bariatric – Canada and France



Flavors:

Drinks: Chocolate, Vanilla, Mixed Berry, Mocha

Puddings: Chocolate, Vanilla

Package size: Package of 6 drink boxes, package of 4 pudding cups

Protein: 15 grams

Carbohydrate: 6 grams or less

Fat: 4 grams or less

Calories: 110

MPC applications & functional advantages



Gelling

Greek yogurt, puddings



Foaming & whipping

Beverages, puddings, bakery





In summary, why work with Vitalus?

Excellence — the quality of our raw ingredient is one of the best in the world

Expertise — solid technical knowledge in the manufacture of milk protein ingredients

Collaboration — we partner with you to design and develop a customized ingredient right for you