

Health, Nutrition and Care

2023 PRODUCT BROCHURE

NUTRITION · HEALTH · BIOSCIENCE



YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

Fat-soluble vitamins

Water-soluble vitamins

Lipids

Nutraceuticals

HMOs

Carotenoids

Enzymes

Minerals

Active Pharmaceutical Ingredients (APIs)

YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

PRODUCTS WITH PURPOSE

Fat-soluble vitamins

Quali®-A / Vitamin A (Retinol) – Liquid**

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Vitamin A Acetate 1.5 MIU/g Stabilized with tocopherol. Oily solution, based on peanut oil. Contains min 1,500,000 IU Vit. A/g, min. 516 mg/g of Vit. A Acetate equivalent to 450 mg/g of retinol	●	●			5	04 1884 6.294	●			●	●		●	●	
Vitamin A Palmitate 1.0 MIU/g Stabilized with tocopherol. Oily solution, based on peanut oil. Contains min 1,000,000 IU Vit. A/g, min. 550 mg/g of Vit. A Palmitate equivalent to 300 mg/g of retinol	●	●			5	04 3140 0.294	●			●	●		●	●	
Vitamin A Palmitate/M 1.0 MIU/g Stabilized with tocopherol. Oily solution, based on medium chain triglycerides. Contains min 1,000,000 IU Vit. A/g, min. 550 mg/g of Vit. A Palmitate equivalent to 300 mg/g of retinol	●	●			5	50 0853 0.294	●			●	●		●	●	
Vitamin A Palmitate 1.0 MIU/g Stabilized with BHA/BHT. Oily solution, based on peanut oil. Contains min 1,000,000 IU Vit. A/g, min. 550 mg/g of Vit. A Palmitate equivalent to 300 mg/g of retinol	●	●			5	04 2060 3.294	●			●	●		●	●	
Vitamin A Palmitate 1.7 MIU/g Stabilized with BHA/BHT. Oily liquid. Contains min 1,700,000 IU Vit. A palmitate/g, min. 934 mg/g of Vit. A Palmitate equivalent to 510 mg/g of retinol	●	●			5 20	04 2401 3.294 04 2401 3.336	●		●	●			●	●	
Vitamin A Palmitate 1.7 MIU/g Stabilized with tocopherol. Oily liquid. Contains min 1,700,000 IU Vit. A/g, min. 934 mg/g of Vit. A Palmitate equivalent to 510 mg/g of retinol	●	●			5 20	04 1857 9.294 04 1857 9.336	●			●	●	●	●	●	
Vitamin A Palmitate 1.7 MIU/g Without stabilizers. Oily liquid. Contains min 1,700,000 IU Vit. A/g, min. 934 mg/g of Vit. A Palmitate equivalent to 510 mg/g of retinol	●	●	●	●	5 20 190	04 2400 5.294 04 2400 5.336 04 2400 5.420	●		●	●	●		●	●	
Retinyl Palmitate 1.7 MIU/g Ph*** API with specific service package for pharma registered applications. Without stabilizers. Oily liquid. 510 mg Retinol Equivalents/g	●	●	●	●	5 20	50 1626 2.294 50 1626 2.336	●		●					●	
Vitamin A Palmitate 1.0 MIU/g and Vitamin D3 100,000 IU/g Stabilized with tocopherol. Oily solution (corn oil). Contains min 1,000,000 IU Vit. A and 100,000 IU Vit. D3/g, min. 550 mg/g of Vit. A Palmitate equivalent to 300 mg/g of retinol and 2500 mg Vit. D3	●	●			5	50 1155 8.294	●			●	●		●	●	
Vitamin A Water-miscible Type 100 Stabilized with BHA/BHT. Contains min 1,000,000 IU Vit. A/g, min. 550 mg/g of Vit. A Palmitate equivalent to 300 mg/g of retinol		●			6 L	04 2131 6.126	●			●				●	
Vitamin A + D3 Water-miscible Type 100/20 Stabilized with BHA/BHT. 0.5 mg cholecalciferol/g and 30 mg Retinol Equivalents/g		●			6 L	50 1156 6.126	●			●				●	

US FDA 2018 label: 1 IU vitamin A = 0.3 mcg retinol activity equivalents (RAE); *Launch expected during the course of 2023.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval



Quali®-A / Vitamin A (Retinol) – Powder**

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian	
Dry Vitamin A Acetate 500 AF Beadlet™, tablet grade. Based on starch. Without antioxidants. Contains min 500,000 IU Vit. A/g, min. 172 mg/g of Vit. A Acetate equivalent to 150 mg/g of retinol	●	●			5	50 1614 4.609										
					20	50 1614 4.641		●		●						●
Dry Vitamin A Acetate 500 B Stabilized with BHT. Beadlet™, tablet grade. Based on bovine gelatin. Contains min 500,000 IU Vit. A/g, min. 172 mg/g of Vit. A Acetate equivalent to 150 mg/g of retinol					5	50 1227 9.609										
					20	50 1227 9.656		●		●	●				●	
Dry Vitamin A Acetate 325 CWS/A Stabilized with tocopherol. Beadlet™, Beadlet™, cold water dispersible. Based on gum acacia. Contains min 325,000 IU Vit. A/g, min. 112 mg/g of Vit. A Acetate equivalent to 97.5 mg/g of retinol	●	●			5	50 1033 0.304										
					20	50 1033 0.341 (Origin: Switzerland)										
					5	50 1352 6.304		●		●	●	●	●	●	●	●
					20	50 1352 6.341 (Origin: USA)										
Dry Vitamin A Acetate 325 N Stabilized with tocopherol. Powder, spray dried. Based on starch. Contains min 325,000 IU Vit. A/g, min. 112 mg/g of Vit. A Acetate equivalent to 97.5 mg/g of retinol. Does not contain a flow agent, e.g. silicon dioxide.	●	●			20	50 1638 0.341										
								●		●	●	●	●		●	
Dry Vitamin A Palmitate, Type 250 CWS Stabilized with BHA, BHT Beadlet™, cold water dispersible. Contains min 250,000 IU Vit. A/g, min. 86 mg/g of Vit. A Acetate equivalent to 75 mg/g of retinol					25	04 2993 7.368										●
Dry Vitamin A Palmitate, Type 250 CWS/F Stabilized with tocopherol. Beadlet™, cold water dispersible. Based on fish gelatin. Contains min 250,000 IU Vit. A/g, min. 137.5 mg/g of Vit. A Palmitate equivalent to 75 mg/g of retinol	●	●	●		25	04 2187 1.368			●							●
Dry Vitamin A Palmitate 250 S/N Stabilized with BHT. Powder, spray dried. Starch-based. Contains min 250,000 IU Vit. A/g, min. 137 mg/g of Vit. A Palmitate equivalent to 75 mg/g of retinol	●	●			20	50 1255 4.341 (Origin: France)								●	●	●
Dry Vitamin A Palmitate 250 S/N-B Stabilized with BHT and sodium ascorbate. Beadlet™, cold water dispersible. Starch-based. Contains min 250 000 IU Vit. A/g, min. 137 mg/g of Vit. A Palmitate equivalent to 75 mg/g of retinol	●	●			5	50 0381 4.304										
					25	50 0381 4.606		●		●	●				●	●

US FDA 2018 label: 1 IU vitamin A = 0.3 mcg retinol activity equivalents (RAE); *Product formulations which utilize Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

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ADDITIONAL INFORMATION | **Vitamin A (Retinol)**

ROLE:

Vitamin A is necessary for vision, growth and tissue differentiation. It helps protect the cell membrane structure and is important for keeping the skin, eyes, and inner linings of the body healthy and resistant to infection. Vitamin A is also needed for the maintenance and growth of teeth, nails, hair, bones and glands.

FOOD SOURCES:

Liver, kidney, eggs, milk, butter, margarine, fish and fish liver oil.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Upgrade your vision, Improve your gut health, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for men, Essentials for healthy aging, Essentials for life, Nourish your beauty, Essentials for vegetarians.

EU HEALTH CLAIMS:

- *Vitamin A contributes to normal iron metabolism.*
- *Vitamin A contributes to the maintenance of normal mucous membranes.*
- *Vitamin A contributes to the maintenance of normal skin.*
- *Vitamin A contributes to the maintenance of normal vision.*
- *Vitamin A contributes to the normal function of the immune system.*
- *Vitamin A has a role in the process of cell specialisation.*

Quali®-D / Vitamin D3 (Cholecalciferol) – Liquid**

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Vitamin D3 1.0 MIU/g Stabilized with tocopherol. Oily solution (medium chain triglycerides). Contains 0.90-1.10 MIU Vit. D3/g, 22.5-27.5 mg/g	●	●	●	●	5	50 1157 4.294	●		●	●	●	●	●	●	(●)

**US FDA 2018 label: 1 IU vitamin D = 0.025 mcg vitamin D.

Quali®-D / Vitamin D3 (Cholecalciferol) – Powder**

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Vitamin D3 Crystalline 40,000,000 IU Vit. D3/g, 1,000,000 µg cholecalciferol/g	●	●			250 g	50 0927 8.258 (Origin: France)									
					250 g	50 1629 9.258 (Origin: Switzerland)		●	●					●	(●)
Vitamin D3 Crystalline Ph API with specific service package for pharma registered applications. 40,000,000 IU Vit. D3/g, 1,000,000 µg cholecalciferol/g	●	●	●	●	250 g	50 1626 3.258 (Origin: France)		●	●						(●)
Dry Vitamin D3, Type 100 CWS Stabilized with tocopherol. Beadlet***, cold water dispersible. 100,000 IU Vit. D3/g. Contains min 100,000 IU Vit. D/g, min. 2.5 mg/g	●	●			5	50 1201 5.304		●	●						(●)
					25	50 1201 5.368									
Dry Vitamin D3 100 CWS Ph API with specific service package for pharma registered applications	●	●	●	●	5	50 1647 3.304		●	●						(●)
					25	50 1647 3.368		●	●						
Dry Vitamin D3 100 CWS/AM Stabilized with tocopherol. Beadlet***, Based on gum acacia. Contains min 100,000 IU Vit. D3/g, min. 2.5 mg/g	●	●			25	50 1147 7.368		●	●	●					(●)
Dry Vitamin D3 100 N Stabilized with tocopherol. Spray dried. Starch based. Contains min 100,000 IU Vit. D3/g, min. 2.5 mg/g. Does not contain a flow agent, e.g. silicon dioxide.	●	●			20	50 1637 1.341		●	●	●	●				(●)
Dry Vitamin D3 100 SD/S Stabilized with tocopherol. Spray dried, cold water dispersible. Starch-based/allergen free. Contains min 100,000 IU Vit. D3/g, min. 2.5 mg/g	●	●			5	50 1095 0.304		●	●	●	●	●	●	●	(●)
					20	50 1095 0.341									
Dry Vitamin D3 100 SD/S Stabilized with tocopherol. Spray dried, cold water dispersible. Starch-based/allergen free. Contains min 100,000 IU Vit. D3/g, min. 2.5 mg/g	●	●			20	50 1640 6.341		●	●	●	●	●	●	●	(●)
Dry Vitamin D3 100 SD/S Ph API with specific service package for pharma registered applications. Stabilized with tocopherol. Spray dried, cold water dispersible. Starch-based/allergen free. Contains min 100,000 IU Vit. D3/g, min. 2.5 mg/g	●	●	●	●	5	50 1621 2.304		●	●						(●)
					20	50 1621 2.341		●	●						

US FDA 2018 label: 1 IU vitamin D = 0.025 mcg vitamin D. (-) Regional differences. *Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

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ADDITIONAL INFORMATION | Vitamin D3 (Cholecalciferol)

ROLE:

Vitamin D3 helps the body maintain and utilize the calcium and phosphorus needed to build strong bones and teeth. A deficiency of vitamin D3 can result in rickets, a disease in which the bones become bent or twisted. It helps calcium to reduce the risk of osteoporosis. Vitamin D3 contributes to the normal function of the immune system and healthy inflammatory response and to the maintenance of normal muscle function.

FOOD SOURCES:

Liver, fortified milk, fish liver oil and other fatty substances. A precursor in the skin is converted to vitamin D3 by sunlight.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Improve your gut health, Enhance your mobility, Guard your heart, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for men, Essentials for healthy aging, Essentials for life, Optimize your weight, Power your performance, Nourish your beauty, Essentials for vegetarians.

EU HEALTH CLAIMS:

- Vitamin D contributes to normal absorption/utilisation of calcium and phosphorus.
- Vitamin D contributes to normal blood calcium levels.
- Vitamin D contributes to the maintenance of normal bones.
- Vitamin D contributes to the maintenance of normal muscle function.
- Vitamin D contributes to the maintenance of normal teeth.
- Vitamin D contributes to the normal function of the immune system.
- Vitamin D has a role in the process of cell division.
- Vitamin D is needed for normal growth and development of bone in children.
- Calcium and vitamin D help to reduce the loss of bone mineral in post-menopausal women. Low bone mineral density is a risk factor for osteoporotic bone fractures.
- Vitamin D helps to reduce the risk of falling associated with postural instability and muscle weakness. Falling is a risk factor for bone fractures among men and women 60 years of age and older.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval



Quali®-E / Vitamin E (dl-α-Tocopherol, dl-α-Tocopheryl Acetate) – Liquid**

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
dl-α-Tocopherol Content of all-rac-α-tocopherol acc. to USP: 97.0–102.0%	●	●	●	●	5	04 1027 6.294									
	●	●	●	●	20	04 1027 6.336	●		●	●	●	●	●		●
	●	●	●	●	50	04 1027 6.396									
dl-α-Tocopheryl Acetate Content of all-rac-α-tocopheryl acetate acc. to USP: 96.5–102.0%	●	●	●	●	5	04 2008 5.301									
	●	●	●	●	20	04 2008 5.331	●								●
	●	●	●	●	190	04 2008 5.422	●		●****	●	●	●	●		●
	●	●	●	●	900	04 2008 5.476									
dl-α-Tocopheryl Acetate Ph*** API with specific service package for pharma registered applications. 1000 IU Vitamin E/g	●	●	●	●	5	50 1626 0.301									
	●	●	●	●	20	50 1626 0.331	●		●						●
	●	●	●	●	190	50 1626 0.422									

1 mg dl α-tocopherol acetate = 1 IU = 0.67 mg α-tocopherol equivalent (FAO/WHO) = 0.45 mg vitamin E as d α-tocopherol (US FDA); 1 mg dl α-tocopherol = 1.1 IU = 0.74 mg α-tocopherol equivalent (FAO/WHO) = 0.5 mg vitamin E as d α-tocopherol (US FDA); 1 mg d α-tocopherol acetate = 1.36 IU = 0.91 mg α-tocopherol equivalent (FAO/WHO) = 0.91 mg vitamin E as d α-tocopherol (US FDA); 1 mg d α-tocopherol = 1.49 IU = 1 mg α-tocopherol equivalent (FAO/WHO) = 1 mg vitamin E as d α-tocopherol (US FDA); *Launch expected during the course of 2023; ****Future applicability for pharma registered products in limited markets only.

Quali®-E / Vitamin E (dl-α-Tocopherol, dl-α-Tocopheryl Acetate) – Powder**

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Dry Vitamin E 15% CC Spray dried, cold water dispersible. Starch-based. Crystal clear. Contains min. 15% all-rac-α-tocopheryl acetate	●	●			15	50 0128 5.281		●			●				●
Dry Vitamin E 50% CWS/S Spray dried, cold water dispersible. Starch-based. Contains min. 50% all-rac-α-tocopheryl acetate	●	●			20	50 0112 9.341 (Origin: Switzerland)		●		●	●	●	●	●	●
	●	●			20	50 1274 0.341 (Origin: France)		●		●					
Dry Vitamin E 50% CWS/S Ph Spray dried, cold water dispersible. Contains min. 50% all-rac-α-tocopheryl acetate	●	●	●	●	20	50 1657 7.341		●	●						●
Dry Vitamin E 50%, Type SD Spray dried. Contains min. 50% all-rac-α-tocopheryl acetate					15	50 1407 7.281		●		●					
Dry Vitamin E 50% N Spray dried. Starch based. Contains min 50% all-rac-α-tocopheryl acetate. Does not contain a flow agent, e.g. silicon dioxide	●	●			20	50 1635 2.341		●		●	●	●	●		●
Dry Vitamin E Acetate 50% Type SD Spray dried. Contains min. 50% all-rac-α-tocopheryl acetate					50***	04 8855 0.395		●		●					
Dry Vitamin E 75 HP Beadlet****, high potency. Contains min. 74% all-rac-α-tocopheryl acetate	●	●			20	04 8356 7.341		●		●					
	●	●			50****	04 8356 7.402		●		●					

1 mg dl α-tocopherol acetate = 1 IU = 0.67 mg α-tocopherol equivalent (FAO/WHO) = 0.45 mg vitamin E as d α-tocopherol (US FDA); 1 mg dl α-tocopherol = 1.1 IU = 0.74 mg α-tocopherol equivalent (FAO/WHO) = 0.5 mg vitamin E as d α-tocopherol (US FDA); 1 mg d α-tocopherol acetate = 1.36 IU = 0.91 mg α-tocopherol equivalent (FAO/WHO) = 0.91 mg vitamin E as d α-tocopherol (US FDA); 1 mg d α-tocopherol = 1.49 IU = 1 mg α-tocopherol equivalent (FAO/WHO) = 1 mg vitamin E as d α-tocopherol (US FDA); *Only for North America; ****Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Quali®-E / Vitamin E (d-α-Tocopheryl Acetate and d-α-Tocopherol) – Naturally sourced**

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
d-α-Tocopheryl Acetate Content of RRR-α-tocopheryl acetate acc. to USP: 96.0–102.0%	●	●			20	04 8657 4.178									
	●	●			190	04 8657 4.422	●			●	●			●	
Natural Vitamin E SF Oil. α-tocopherol from non-GM sunflower. Contains min. 900 IU/g natural RRR-α-tocopherol, min. 604 mg/g RRR-α-tocopherol	●	●			18	50 1557 4.044								●	
	●	●			190	50 1557 4.422	●			●	●			●	
Dry Natural Vitamin E SF Powder. Starch based. Contains min. 450 IU/g natural RRR-α-tocopherol, contains min. 302 mg/g RRR-α-tocopherol	●	●			20	50 1608 8.341		●		●	●			●	
Dry Vitamin E 700 NS Spray dried, cold water dispersible. Starch-based. Contains min. 700 IU Vit. E/g, contains min. 515 mg/g RRR-α-tocopheryl acetate	●	●			20	50 1189 2.341		●		●	●			●	
Dry Vitamin E Acetate 950 NS Beadlet****, High potency. Contains min. 940 IU Vit. E/g, contains min. 692 mg/g RRR-α-tocopheryl acetate	●	●			5	04 8688 4.304									
	●	●			20	04 8688 4.341		●		●	●				
	●	●			50***	04 8688 4.402		●		●	●				

1 mg dl α-tocopherol acetate = 1 IU = 0.67 mg α-tocopherol equivalent (FAO/WHO) = 0.45 mg vitamin E as d α-tocopherol (US FDA); 1 mg dl α-tocopherol = 1.1 IU = 0.74 mg α-tocopherol equivalent (FAO/WHO) = 0.5 mg vitamin E as d α-tocopherol (US FDA); 1 mg d α-tocopherol acetate = 1.36 IU = 0.91 mg α-tocopherol equivalent (FAO/WHO) = 0.91 mg vitamin E as d α-tocopherol (US FDA); 1 mg d α-tocopherol = 1.49 IU = 1 mg α-tocopherol equivalent (FAO/WHO) = 1 mg vitamin E as d α-tocopherol (US FDA); *Only for North America; ****Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

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Quali®-E / Mixed Tocopherols – Naturally sourced

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Mixed Tocopherols 95 Oily liquid. Tocopherol rich extract (E306*), contains a mixture of minimum 95% of RRR-tocopherols (RRR-alpha-, RRR-beta-, RRR-gamma- and RRR-delta- tocopherol)	●	●	●	●	20 190	50 0289 3.178 50 0289 3.422	●			●	●				●
Mixed Tocopherols 70 IP Oily liquid. Non-GM source. Tocopherol rich extract (E306*), contains a mixture of minimum 70% of RRR-tocopherols (alpha-, beta-, gamma- and delta- tocopherol)	●	●	●	●	18 190	50 1557 3.044 50 1557 3.422	●			●	●				●
Dry Mixed Tocopherols 30% IP Powder. Starch based. Non-GM source. Contains a mixture of minimum 30% of RRR-tocopherols (RRR-alpha-,RRR-beta-,RRR-gamma- and RRR-delta-tocopherol)	●	●	●	●	20	50 1572 1.341		●		●					●

ADDITIONAL INFORMATION | Vitamin E (Tocopherols)

ROLE:

Vitamin E helps protect cell membranes. It also helps maintain the immune system, prolong the life of red blood cells, maintain a healthy circulatory system and facilitate the body’s full utilization of vitamin A. Vitamin E is found in all body tissues and is important for their health and proper functioning. Vitamin E is an antioxidant and is considered to play a role in neutralizing free radicals. These highly reactive molecules are found in the body as a result of normal body processes and from external factors such as environmental pollution. Oxidative damage caused by these reactive molecules is considered to contribute to aging and age-related chronic diseases, such as cataracts, heart disease and cancer.

FOOD SOURCES:

Nuts, seeds, oil, fruits and green leafy vegetables.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Improve your gut health, Enhance your mobility, Guard your heart, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for men, Essentials for healthy aging, Essentials for life, Power your performance, Nourish your beauty, Essentials for vegetarians.

EU HEALTH CLAIMS:

- *Vitamin E contributes to the protection of cells from oxidative stress.*

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Quali®-K / Vitamin K1 (Phylloquinone)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Vitamin K1 Oily liquid	●	●		●	0.1 1	04 3501 5.246 04 3501 5.264	●		●	●		●	●		●
Vitamin K1 API* Oily liquid	●	●	●		1	50 1322 4.264	●		●						●
Dry Vitamin K1 1% N Spray dried. Starch based. Contains min 1% Vit K1 Does not contain a flow agent, e.g. silicon dioxide.	●	●			20	50 1636 7.341		●		●	●	●	●		●
Dry Vitamin K1 5% SD Spray-dried. Based on acacia. 50 mg Vitamin K1/g	●	●			1 20	04 3492 2.268 04 3492 2.341		●	●	●	●	●	●	●	●

*US DMF only.

ADDITIONAL INFORMATION | Vitamin K1 (Phylloquinone)

ROLE:

Vitamin K1 is essential for the clotting of blood. In a healthy person, bacteria in the intestine normally provide a substantial amount of this vitamin. A deficiency may occur in newborns and in people consuming antibacterial agents over a prolonged period. These people are frequently given vitamin K1 under a doctor’s care. Vitamin K1 can maintain bone health.

FOOD SOURCES:

Green leafy vegetables, liver and soy beans, egg yolks, wheat, asparagus and cheese.

HEALTH BENEFITS & SOLUTIONS:

Enhance your mobility, Essentials for kids & teens, Essentials for women, Essentials for life.

EU HEALTH CLAIMS:

- *Vitamin K contributes to normal blood clotting.*
- *Vitamin K contributes to the maintenance of normal bones.*

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

PRODUCTS WITH PURPOSE

Water-soluble vitamins

Quali®-B / Vitamin B1 (Thiamine)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Thiamine Hydrochloride	●	●			20	04 1303 8.341		●		●	●	●	●		●
Thiamine Hydrochloride Ph API with specific service package for pharma registered applications	●	●	●	●	20	50 1625 7.341		●	●						●
Thiamine Mononitrate	●	●	●	●	20	04 1894 3.341		●	●	●	●	●		●	
ROCOAT® Thiamine Mononitrate 33 1/3% Coated	●	●			5 50**	04 2947 3.304 04 2947 3.402		●	●	●	●				●

**Only for North America.

ADDITIONAL INFORMATION | Vitamin B1 (Thiamine)

ROLE:

Thiamine is required to help the body use its major source of energy, carbohydrates, to the fullest extent. Thiamine is also essential for proper muscle coordination, the maintenance of peripheral nerve tissue and for normal growth.

FOOD SOURCES:

Milk, meat, fish, whole grains, legumes and yeast.

HEALTH BENEFITS & SOLUTIONS:

Empower your mind, Guard your heart, Essentials for early life, Essentials for kids & teens, Essentials for healthy aging, Essentials for life, Power your performance, Nourish your beauty.

EU HEALTH CLAIMS:

- *Thiamine contributes to normal energy-yielding metabolism.*
- *Thiamine contributes to normal functioning of the nervous system.*
- *Thiamine contributes to normal psychological function.*
- *Thiamine contributes to the normal function of the heart.*

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Quali®-B / Vitamin B2 (Riboflavin)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Riboflavin Universal	●	●	●	●	10	04 7040 6.231		●	●	●	●	●	●	●	●
Riboflavin Universal Fine Powder	●	●			2x2.5 5	50 0861 1.186 50 0861 1.304		●		●	●	●	●	●	●
Riboflavin 5'-Phosphate Sodium	●	●			1 5 25	04 2141 3.608 04 2141 3.605 04 2141 3.672		●		●		●			●
Riboflavin 5'-Phosphate Ph API with specific service package for pharma registered applications	●	●	●	●	1 5	50 1626 1.608 50 1626 1.605		●	●						●
Riboflavin Tablet Grade	●	●			10	04 7029 5.231		●		●					●
ROCOAT® Riboflavin 33 1/3% Coated	●	●			5 50**	04 2946 5.304 04 2946 5.402		●		●					●

**Only for North America.

ADDITIONAL INFORMATION | Vitamin B2 (Riboflavin)

ROLE:

Riboflavin is important in helping the body transform proteins, fats and carbohydrates into energy. It helps maintain healthy skin and eyes and is also necessary for building and maintaining body tissues.

FOOD SOURCES:

Milk, green vegetables, meat, fish, whole grains, cheese and eggs.

HEALTH BENEFITS & SOLUTIONS:

Empower your mind, Improve your gut health, Guard your heart, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for life, Power your performance, Nourish your beauty.

EU HEALTH CLAIMS:

- Riboflavin contributes to normal energy-yielding metabolism.
- Riboflavin contributes to normal functioning of the nervous system.
- Riboflavin contributes to the maintenance of normal mucous membranes.
- Riboflavin contributes to the maintenance of normal red blood cells.
- Riboflavin contributes to the maintenance of normal skin.
- Riboflavin contributes to the maintenance of normal vision.
- Riboflavin contributes to the normal metabolism of iron.
- Riboflavin contributes to the protection of cells from oxidative stress.
- Riboflavin contributes to the reduction of tiredness and fatigue.



Quali®-B / Vitamin B3 (Niacin /Niacinamide)**

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Niacinamide	●	●	●	●	20	04 8784 8.340		●	●	●	●	●	●	●	
					20***	04 8784 8.202									
Niacin	●	●			20	50 1083 7.340								●	
					500	50 1083 7.429									
Niacinamide Ph			●	●	20	50 1629 1.340		●							
Niacinamide FCC	●	●			25	50 1601 1.366		●	●	●	●	●	●	●	
					25***	50 1601 1.603									
ROCOAT® Niacinamide 33 1/3% Coated	●	●			5	04 2944 9.304		●	●	●				●	
					50****	04 2944 9.402									

US FDA 2018 label: 1 mg niacin = 1 mg niacin equivalents (NE); *Only for China; ****Only for North America.

ADDITIONAL INFORMATION | Vitamin B3 (Niacin /Niacinamide)

ROLE:

Niacin and niacinamide are essential for fat synthesis, protein metabolism and the conversion of food to energy.

FOOD SOURCES:

Meat, fish, whole grains, wheat and legumes.

HEALTH BENEFITS & SOLUTIONS:

Empower your mind, Improve your gut health, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for life, Power your performance, Nourish your beauty.

EU HEALTH CLAIMS:

- Niacin contributes to normal energy-yielding metabolism.
- Niacin contributes to normal functioning of the nervous system.
- Niacin contributes to normal psychological function.
- Niacin contributes to the maintenance of normal mucous membranes.
- Niacin contributes to the maintenance of normal skin.
- Niacin contributes to the reduction of tiredness and fatigue.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Quali®-B / Vitamin B5 (Panthenol, Pantothenate)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Calcium D-Pantothenate Spray-dried	●	●	●	●	25	04 1267 8.366		●	●	●	●	●	●	●	●
D-Panthenol Liquid	●	●			20	04 1385 2.331	●			●	●				●
D-Panthenol Ph API with specific service package for pharma registered applications. Liquid	●	●	●	●	20	50 1625 8.331	●		●						●

ADDITIONAL INFORMATION | Vitamin B5 (Panthenol, Pantothenate)

ROLE:

Pantothenic acid is essential for the formation of certain nerve-regulating substances and hormones. It is also required for metabolism of proteins, fats and carbohydrates.

FOOD SOURCES:

Yeast, liver, kidney, eggs, peanut products, mushrooms and sunflower seeds.

HEALTH BENEFITS & SOLUTIONS:

Empower your mind, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for life, Power your performance, Nourish your beauty.

EU HEALTH CLAIMS:

- Pantothenic acid contributes to normal energy-yielding metabolism.
- Pantothenic acid contributes to normal synthesis and metabolism of steroid hormones, vitamin D and some neurotransmitters.
- Pantothenic acid contributes to the reduction of tiredness and fatigue.
- Pantothenic acid contributes to normal mental performance.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Quali®-B / Vitamin B6 (Pyridoxine)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Pyridoxine Hydrochloride	●	●			20	50 1581 8.340 (Origin: Xinghuo, China)		●		●	●	●		●	
					20	04 1160 4.340 (Origin: Germany)									
Pyridoxine Hydrochloride Ph API with specific service package for pharma registered applications.	●	●	●	●	20	50 1626 5.340 (Origin: Xinghuo, China)		●	●					●	
					20	50 1646 0.340 (Origin: Germany)									
ROCOAT® Pyridoxine Hydrochloride 33 1/3% Coated	●	●	●	●	5	04 2945 7.304		●	●	●	●			●	
					50**	04 2945 7.402									

**Only for North America.

ADDITIONAL INFORMATION | Vitamin B6 (Pyridoxine)

ROLE:

Pyridoxine is necessary for energy metabolism, the formation of certain proteins and the use of amino acids. It also helps the nervous system to function properly and is essential to a healthy immune system. Vitamin B6, along with folate and vitamin B12, is essential to heart health.

FOOD SOURCES:

Liver, salmon, walnuts, peanuts, wheat germ, bananas, carrots, peas, potatoes, beef, lamb and pork.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Upgrade your vision, Enhance your mobility, Guard your heart, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for men, Essentials for healthy aging, Essentials for life, Power your performance, Nourish your beauty, Essentials for vegetarians.

EU HEALTH CLAIMS:

- Vitamin B6 contributes to normal cysteine synthesis.
- Vitamin B6 contributes to normal energy-yielding metabolism.
- Vitamin B6 contributes to normal functioning of the nervous system.
- Vitamin B6 contributes to normal homocysteine metabolism.
- Vitamin B6 contributes to normal protein and glycogen metabolism.
- Vitamin B6 contributes to normal psychological function.
- Vitamin B6 contributes to normal red blood cell formation.
- Vitamin B6 contributes to the normal function of the immune system.
- Vitamin B6 contributes to the reduction of tiredness and fatigue.
- Vitamin B6 contributes to the regulation of hormonal activity.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Quali®-Biotin / Vitamin B7 (Biotin, Vitamin B8, Vitamin H)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
D-Biotin	●	●	●	●	0.05	50 1165 5.240									
					1 pouch	50 1165 5.268									
					25	50 1165 5.372									
D-Biotin Ph API with specific service package for pharma registered applications.	●	●	●	●	0.05	50 1626 4.240									
					1 pouch	50 1626 4.268									
					25	50 1626 4.372									
Bitrit-1® Type A	●	●			10	50 1651 8.190									
					50	50 1651 8.395									

**Future applicability for pharma registered products in limited markets only.

ADDITIONAL INFORMATION | Vitamin B7 (Biotin, Vitamin B8, Vitamin H)

ROLE:

Biotin is necessary for synthesizing fatty acids and breaking down protein and carbohydrate molecules. It also helps in the maintenance of the thyroid and adrenal glands, nervous system, reproductive tracts and skin.

FOOD SOURCES:

Yeast, liver, eggs, beef and pork.

HEALTH BENEFITS & SOLUTIONS:

Empower your mind, Improve your gut health, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for life, Power your performance, Nourish your beauty.

EU HEALTH CLAIMS:

- Biotin contributes to normal energy-yielding metabolism.
- Biotin contributes to normal functioning of the nervous system.
- Biotin contributes to normal macronutrient metabolism.
- Biotin contributes to normal psychological function.
- Biotin contributes to the maintenance of normal hair.
- Biotin contributes to the maintenance of normal mucous membranes.
- Biotin contributes to the maintenance of normal skin.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Quali®-B / Vitamin B9 (Folate, Folic Acid)**

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Folic Acid	●	●			1	04 1782 3.268									
					25	04 1782 3.372		●		●	●	●	●	●	●
Folic Acid Food Grade	●	●			1	50 0435 7.268									
					25	50 0435 7.372		●		●	●			●	●
Folic Acid Ph API with specific service package for pharma registered applications.	●	●	●	●	1	50 1625 9.268		●	●						●
					25	50 1625 9.372		●							●
Metafolin**** (Calcium L-methylfolate)	●	●			0.1	50 1557 1.074									●
					1	50 1557 1.270		●		●	●				●

US FDA 2018 label: 1 mcg folic acid = 0.6 mcg dietary folate equivalents (DFE); **Metafolin® is a registered trademark of Merck KGaA, Darmstadt, Germany.

ADDITIONAL INFORMATION | Vitamin B9 (Folate, Folic Acid)

ROLE:

Folate is required for the formation of red blood cells, certain body proteins and genetic materials for the cell nucleus. It also helps to prevent macrocytic anaemia, a disease in which the blood cells grow larger than normal and have a shorter lifespan. Pregnant women and those anticipating pregnancy should increase their consumption of folic acid to 400 mcg to prevent birth defects, such as neural tube defects and spina bifida. Emerging science suggests it may play an important role in reducing risk of cardiovascular disease, dementia and certain cancers.

FOOD SOURCES:

Liver, beans, peanuts, green leafy vegetables, orange juice and strawberries.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Enhance your mobility, Guard your heart, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for healthy aging, Essentials for life, Power your performance, Nourish your beauty.

EU HEALTH CLAIMS:

- Folate contributes to maternal tissue growth during pregnancy.
- Folate contributes to normal amino acid synthesis.
- Folate contributes to normal blood formation.
- Folate contributes to normal homocysteine metabolism.
- Folate contributes to normal psychological function.
- Folate contributes to the normal function of the immune system.
- Folate contributes to the reduction of tiredness and fatigue.
- Folate has a role in the process of cell division.
- Supplemental folic acid intake increases maternal folate status.
- Low maternal folate status is a risk factor in the development of neural tube defects in the developing foetus.



Quali®-B / Vitamin B12 (Cyanocobalamin)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Vitamin B12 Crystalline	•	•			0.01	04 2915 5.234									
					0.1	04 2915 5.252		•	•	•	•		•		
					1	04 2915 5.264								•	
Vitamin B12 Crystalline Ph	•			•	0.1	50 1630 0.252		•	•					•	
Vitamin B12 1% SD Spray dried powder form.	•	•			5	50 1251 1.304		•	•	•				•	
					20	50 1251 1.341									
Vitamin B12 0.1% WS	•	•			20	50 1640 2.341		•		•				•	
Vitamin B12 0.1% WS Spray dried powder form.	•	•			5	04 2909 0.304		•	•	•	•			•	
Vitamin B12 Crystalline Food Grade Fermentation food grade	•	•			1	50 1642 0.264		•					•	•	

ADDITIONAL INFORMATION | Vitamin B12 (Cyanocobalamin)

ROLE:

Along with folate, Vitamin B12 is necessary for the formation of DNA and the production of healthy red blood cells. It also helps maintain the nervous system and is essential to maintaining mental function. The lack of Vitamin B12 in the body causes pernicious anemia. Vitamin B12, along with B6 and folate, is essential to heart health.

FOOD SOURCES:

Kidney, liver, shellfish, sardines, salmon, herring and egg yolks.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Upgrade your vision, Enhance your mobility, Guard your heart, Essentials for kids & teens, Essentials for women, Essentials for men, Essentials for healthy aging, Essentials for life, Power your performance, Nourish your beauty, Essentials for vegetarians.

EU HEALTH CLAIMS:

- Vitamin B12 contributes to normal energy-yielding metabolism.
- Vitamin B12 contributes to normal functioning of the nervous system.
- Vitamin B12 contributes to normal homocysteine metabolism.
- Vitamin B12 contributes to normal psychological function.
- Vitamin B12 contributes to normal red blood cell formation.
- Vitamin B12 contributes to the reduction of tiredness and fatigue.
- Vitamin B12 has a role in the process of cell division.
- Vitamin B12 contributes to the normal function of the immune system.



Quali®-C / Vitamin C (L-Ascorbic Acid, Ascorbate)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Ascorbic Acid	●	●			25	04 0805 0.366									
					25	04 0805 0.368		●		●	●	●			●
					500	04 0805 0.429									
Ascorbic Acid Ph API with specific service package for pharma registered applications					25	50 1625 5.366		●	●						●
					25	50 1625 5.368									
Ascorbic Acid Fine Powder	●	●	●	●	25	04 2246 0.366		●	●**	●	●	●		●	●
					25	04 2246 0.368									
Ascorbic Acid Ultra Fine Powder	●	●	●	●	20	50 0976 6.341		●	●	●	●				●
Ascorbic Acid Fine Granular	●	●	●	●	25	04 0809 3.366		●	●	●	●				●
Ascorbic Acid 90% Granulation	●	●			25	50 0757 7.368		●		●					●
Ascorbic Acid 95% Granulation	●	●			25	50 0774 7.368		●	●	●					●
Ascorbic Acid 97% Granulation	●	●			25	50 1032 2.368		●		●					●
Coated Ascorbic Acid, Type EC 97.5% ascorbic acid content. Ethyl cellulose coating	●	●			25	04 2511 7.368		●	●	●					●
Coated Ascorbic Acid, Type FC 94% ascorbic acid content. Fat coating	●	●			25	04 4080 9.368		●		●			●		●
Calcium Ascorbate	●	●	●	●	25	04 1944 3.368		●	●	●	●				●
Sodium Ascorbate Crystalline	●	●			25	04 0817 4.606		●		●	●	●	●	●	●
Sodium Ascorbate Ph API with specific service package for pharma registered applications.			●	●	25	50 1625 6.606		●	●						●
Sodium Ascorbate 99% TG	●	●			20	50 0142 0.341		●		●					●
Ascorbyl Palmitate	●	●			5	04 1859 5.304									●
					25	04 1859 5.368		●		●	●	●			●
RONOXAN® A Ascorbyl Palmitate, dl-α-Tocopherol, Lecithin	●	●			1	04 4253 4.270	●				●				●

**Future applicability for pharma registered products in limited markets only.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Vitamin C (L-Ascorbic Acid, Ascorbate)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
VC Ascorbic Acid regular	●	●			25	50 1583 8.368		●		●			●	●	●
VC Ascorbic Acid 40-80 mesh	●	●			25	50 1584 0.368		●		●					●
VC Ascorbic Acid 100 mesh (90%)	●	●			25	50 1584 1.368		●		●				●	●
VC Ascorbic Acid 100 mesh (95%)	●	●			25	50 1584 2.368		●		●				●	●
VC Ascorbic Acid 100 mesh (99%)	●	●			25	50 1584 3.368		●		●				●	●
VC Ascorbic Acid 325 mesh	●	●			25	50 1584 4.341		●		●					●
VC Ascorbic Acid DC 90%	●	●			25	50 1585 0.368		●		●					●
VC Ascorbic Acid DC 90% LF Lactose-free	●	●			25	50 1585 1.368		●		●					●
VC Ascorbic Acid DC 95% SF Starch-free	●	●			25	50 1585 3.368		●		●					●
VC Ascorbic Acid DC 97%	●	●			25	50 1585 4.368		●		●					●
VC Ascorbic Acid DC 97% SF Starch-free	●	●			25	50 1585 5.368		●		●			●		●
VC Ascorbic Acid Special	●	●			25	50 1594 2.368		●		●			●		●
VC Sodium Ascorbate regular	●	●			25	50 1584 6.368		●		●		●	●		●
VC Sodium Ascorbate DC	●	●			25	50 1584 7.368		●		●					●
VC Calcium Ascorbate regular	●	●			25	50 1584 8.368		●		●					●
VC Calcium Ascorbate DC	●	●			25	50 1584 9.368		●		●					●

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



ADDITIONAL INFORMATION | **Vitamin C** (L-Ascorbic Acid, Ascorbate)

ROLE:

Vitamin C aids the body in the production of collagen, a substance that provides support to muscles, vascular tissues, bones and cartilage. Vitamin C aids in the absorption of iron and also contributes to the health of teeth and gums. It is one of the most important water-soluble antioxidants in the body. Vitamin C is considered to enhance the immune response and play a protective role against cardiovascular disease, cataracts and certain types of cancer.

FOOD SOURCES:

Citrus fruits, potatoes, broccoli, sweet peppers, kale, cabbage, cauliflower, tomatoes, strawberries and acerola.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Enhance your mobility, Guard your heart, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for men, Essentials for healthy aging, Essentials for life, Power your performance, Nourish your beauty, Essentials for vegetarians.

EU HEALTH CLAIMS:

- *Vitamin C contributes to normal collagen formation for the normal function of blood vessels.*
- *Vitamin C contributes to normal collagen formation for the normal function of bones.*
- *Vitamin C contributes to normal collagen formation for the normal function of cartilage.*
- *Vitamin C contributes to normal collagen formation for the normal function of gums.*
- *Vitamin C contributes to normal collagen formation for the normal function of skin.*
- *Vitamin C contributes to normal collagen formation for the normal function of teeth.*
- *Vitamin C contributes to normal energy-yielding metabolism.*
- *Vitamin C contributes to normal functioning of the nervous system.*
- *Vitamin C contributes to normal psychological function.*
- *Vitamin C contributes to the normal function of the immune system.*
- *Vitamin C contributes to the protection of cells from oxidative stress.*
- *Vitamin C contributes to the reduction of tiredness and fatigue.*
- *Vitamin C contributes to the regeneration of the reduced form of vitamin E.*
- *Vitamin C increases iron absorption.*

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



YOUR END-TO-END PARTNER

PRODUCTS | CUSTOMIZED SOLUTIONS | EXPERT SERVICES

PRODUCTS WITH PURPOSE

Nutritional lipids

life'sDHA™ (Vegetarian Omega-3 Long Chain Polyunsaturated Fatty Acids)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application							
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian			
DHASCO-B® Nutritional oil from microalgae containing min. 38% DHA (380 mg/g)	●	●			9	50 1598 6.043	●												
					18	50 1598 6.044													
					200	50 1598 6.046													
DHASCO-B® Powder Spray dried powder consisting of DHA derived from microalgae in a matrix of dried glucose syrup and sodium caseinate , min. 11% (110 mg) DHA per g	●	●			5	50 1637 3.304		●											
life'sDHA™ S10-P200 Cold water dispersible. Free-flowing powder derived from microalgae containing 10% DHA (100 mg/g)	●	●			12.5	50 1372 0.148		●		●								●	●
life'sDHA™ S17-P100 Not cold water dispersible. Free-flowing powder derived from microalgae containing 17% DHA (170 mg/g)	●	●			12.5	50 1371 2.148		●		●								●	●
life'sDHA™ 100 mg Vegetarian Capsules DHA-S oil in a 300 mg (10 oval) carrageenan vegetarian capsule providing 100 mg DHA					8,000 caps	50 1373 9.035	●											●	●
life'sDHA™ 200 mg Vegetarian Capsules DHA-S oil in a 600 mg (14 oval) carrageenan vegetarian capsule providing 200 mg DHA					8,000 caps	50 1374 7.035	●											●	●
life'sDHA™ S35-O300 Nutritional oil derived from algae containing min. 35% DHA (350 mg/g)	●	●			1	50 1375 5.264	●												
					5	50 1375 5.294													
					23	50 1375 5.037													
					180	50 1375 5.418													
life'sDHA™ S35-O300DS Nutritional oil derived from algae containing min. 35% DHA (350 mg/g). Longer shelf life at ambient than S35-O300	●	●			23	50 1643 4.037	●												
					180	50 1643 4.418													
life'sDHA™ S40-O400 Nutritional oil derived from algae containing min. 40% DHA (400 mg/g)	●	●			1	50 1509 0.264	●												
					5	50 1509 0.294													
					23	50 1509 0.037													
					180	50 1509 0.418													
life'sDHA™ S40-O400DS Nutritional oil derived from algae containing min. 40% DHA (400 mg/g). Longer shelf life at ambient than S40-O400	●	●			23	50 1643 5.037	●												
					180	50 1643 5.418													
life'sDHA™ S40-O500 Nutritional oil derived from algae containing min. 40% DHA (400 mg/g), Rosemary free and light yellow	●	●			1	50 1628 6.264	●												
					5	50 1628 6.294													
					23	50 1628 6.037													
					180	50 1628 6.418													
life'sDHA™ SF55-O200DS Nutritional oil (clear orange) derived from algae containing min. 55% DHA (550 mg/g)	●	●			23	50 1646 6.037	●												
					180	50 1646 6.418													

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



ADDITIONAL INFORMATION | *life'sDHA*[™] (omega-3 oils)

ROLE:

DHA, an omega-3 fatty acid, is a major structural fat in the brain and eyes. It accounts for up to 97 percent of the omega-3 fats in the brain and up to 93 percent of the omega-3 fats in the eye. A growing body of research continues to support the important role that DHA plays for both mother and baby. DHA is important for optimal infant brain, eye and nervous system development, and has been shown to support healthy pregnancy. DHA also supports brain function in adults.

FOOD SOURCES:

The primary dietary source of DHA is fatty fish. Dietary sources for infants include breast milk and DHA-/ARA-fortified infant formula. Unfortunately, women of childbearing age who consume a typical Western diet are at risk for low stores of DHA.

HEALTH BENEFITS & SOLUTIONS:

Empower your mind, Improve your Digestion, Enhance your mobility, Essentials for early life, Essentials for kids & teens, Essentials for men, Essentials for healthy aging, Optimize your weight, Power your performance, Nourish your beauty, Essentials for vegetarians.

EU HEALTH CLAIMS:

- *DHA contributes to maintenance of normal brain function.*
- *DHA contributes to the maintenance of normal blood triglyceride levels.*
- *DHA contributes to the maintenance of normal vision.*
- *DHA intake contributes to the normal visual development of infants up to 12 months of age.*
- *DHA maternal intake contributes to the normal brain development of the foetus and breastfed infants.*
- *DHA maternal intake contributes to the normal development of the eye of the foetus and breastfed infants.*

US QUALIFIED HEALTH CLAIMS:

- *Supportive, but not conclusive, research shows that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease. One serving of [Name of the food] provides [] gram of EPA and DHA omega-3 fatty acids [See nutrition information for total fat, saturated fat, and cholesterol content].*

Note: Dietary supplements may declare the amount of EPA and DHA per serving in "Supplement Facts", instead of making the declaration in the claim.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



life's™ OMEGA (Vegetarian Omega-3 Long Chain Polyunsaturated Fatty Acids)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian
life's™ OMEGA 45 Nutritional oil from microalgae providing min. 400 mg/g DHA + EPA					1	50 1369 0.264										
	•	•			5	50 1369 0.294	•							•	•	
					23	50 1369 0.037										
					180	50 1369 0.418										
life's™ OMEGA 60 Nutritional oil from microalgae providing min. 550 mg/g Total Omega-3					1	50 1529 5.264										
	•	•			5	50 1529 5.294	•							•	•	
					23	50 1529 5.037										
					180	50 1529 5.418										
life's™ OMEGA 60-DS Nutritional oil from microalgae providing min. 550 mg/g Total Omega-3. Longer shelf life at ambient than life's™ OMEGA 60	•	•			23	50 1643 3.037	•							•	•	
					180	50 1643 3.418										
life's™ OMEGA 01030DS Nutritional oil from microalgae providing min. 510 mg/g Total Omega-3			•		190	50 1650 5.420	•							•	•	
life's™ OMEGA 300 mg Vegetarian Capsules life's™ OMEGA oil in a 790 mg (14 oval) carrageenan vegetarian capsule providing min. 300 mg DHA + EPA per capsule			•		6000	50 1501 0.034	•							•	•	

ADDITIONAL INFORMATION | life's™ OMEGA (omega-3 oils)

ROLE:

These oils, produced from microalgae, contain eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Recent research has shown these compounds to have triglyceride lowering activity, which may be helpful in reducing the risk of cardiovascular diseases.

FOOD SOURCES:

Fish (anchovy, sardines, mackerel, herring, tuna) and dietary supplements. Canadian data suggest 0.56 mg/100 kcal or at least 0.5% of energy.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Upgrade your vision, Improve your gut health, Enhance your mobility, Guard your heart, Essentials for women, Essentials for men, Essentials for healthy aging, Optimize your weight, Power your performance, Nourish your beauty, Essentials for vegetarians.

EU HEALTH CLAIMS:

- DHA and EPA contribute to the maintenance of normal blood pressure.
- DHA and EPA contribute to the maintenance of normal blood triglyceride levels.
- EPA and DHA contribute to the normal function of the heart.

US QUALIFIED HEALTH CLAIMS:

- Supportive, but not conclusive, research shows that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease. One serving of [Name of the food] provides [] gram of EPA and DHA omega-3 fatty acids [See nutrition information for total fat, saturated fat, and cholesterol content].

Note: Dietary supplements may declare the amount of EPA and DHA per serving in “Supplement Facts”, instead of making the declaration in the claim.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval



life's™ GLA (Vegetarian Omega-6 Long Chain Polyunsaturated Fatty Acids)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian
life's™ GLA '10' n-6 Oil Refined Evening Primrose Oil. Minimum 9% γ-linolenic acid (GLA)		●			25	04 2239 8.372	●			●	●				●	●
life's™ GLA '25' n-6 Oil Refined Borage Oil. Minimum 23% γ-linolenic acid (GLA)		●			25 185	50 0854 9.372 50 0854 9.223	●			●	●				●	●

life's™ ARA (Vegetarian Omega-6 Long Chain Polyunsaturated Fatty Acids)

ARASCO® Nutritional oil from fungi containing min. 38% ARA (380 mg/g)	●	●			9 18 200	50 1500 2.043 50 1500 2.044 50 1500 2.046	●					●			●	●
ARASCO® Powder Spray dried powder consisting of ARA derived from fungi in a matrix of dried glucose syrup and sodium caseinate, min. 11% (110 mg) ARA per g	●	●			5	50 1637 4.304		●				●			●	●
life's™ ARA '12' n-6 ARA Powder Spray dried powder consisting of ARA derived from fungi in a matrix of fish gelatin, sucrose and corn starch, min. 12% (120 mg) ARA per g		●			5	50 0324 5.304		●				●			●	●

life's™ DHA+ARA (Vegetarian Omega-3 and Omega-6 Long Chain Polyunsaturated Fatty Acids)

Formulaid®-B (2:1 ARA:DHA) From fungi and microalgae, containing 2 parts ARASCO® and 1 part DHASCO®-B	●	●			9 18 200	50 1559 0.043 50 1559 0.044 50 1559 0.046	●					●			●	●
Formulaid®-B (1:1 ARA:DHA) From fungi and microalgae, containing 1 part ARASCO® and 1 part DHASCO®-B	●	●			9 18 200	50 1591 9.043 50 1591 9.044 50 1591 9.046	●					●			●	●

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



ADDITIONAL INFORMATION | *life's™GLA* (omega-6 oils)

ROLE:

life's™GLA is a rich source of gamma linolenic acid (GLA). As suggested in recent research, GLA may be helpful in suppressing or reducing inflammation in atopic eczema and psoriasis. Involved in the restoration of the natural moisture barrier of the skin.

FOOD SOURCES:

Sunflower seed oil (AL), safflower oil (AL), evening primrose oil (GLA) or borage oil (GLA).

HEALTH BENEFITS & SOLUTIONS:

Nourish your beauty.

ADDITIONAL INFORMATION | *life's™ARA* (omega-6 oils)

ROLE:

ARA (arachidonic acid), a long-chain omega-6 fatty acid, is the principal omega-6 in the brain and is abundant in other cells throughout the body. It is also a precursor to a group of hormone-like substances called eicosanoids that play a role in immunity, blood clotting and other vital functions in the body. Like DHA, ARA occurs naturally in breast milk and is important to infant development.

FOOD SOURCES:

Dietary sources for infants include breast milk and DHA-/ARA-fortified infant formula. Most women receive adequate amounts of ARA by eating foods that are plentiful in the Western diet, such as meat, eggs and milk.

HEALTH BENEFITS & SOLUTIONS:

Essentials for early life



MEG-3® (Marine Omega-3 Long Chain Polyunsaturated Fatty Acids)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian
MEG-3® '15' n-3 Emulsion LV Min. 15% total Omega-3. Min. 12.5% EPA + DPA + DHA. Min. 6.25% DHA and 4.5% EPA		●			10	50 0968 5.098	●				●				●	
MEG-3® '30' n-3 Food Oil Triglycerides, min. 30% total Omega-3. Min. 25% DHA + EPA. Min. 9% EPA. Min. 12.5% DHA		●			25 190	50 1529 0.372 50 1529 0.420	●				●				●	
MEG-3® '30' n-3 INF Oil Triglycerides, min. 30% total Omega-3. Min. 23% DHA		●			25 190	50 1528 9.372 50 1528 9.420	●				●				●	
MEG-3® 1812 TG 3a Food Oil Steam deodorized triglycerides, min 160 mg EPA, 100 mg DHA and min 280 mg total Omega-3 per g		●			15.85 190	50 1516 1.152 50 1516 1.420	●			●	●				●	
MEG-3® 1812 TG 8a Food Oil Steam deodorized triglycerides, min. 160 mg EPA, 100 mg DHA. 280 mg Omega-3 per g		●			190	50 1516 2.420	●			●	●				●	
MEG-3® 30% 8a Food Oil Triglycerides, min. 250 mg – max. 320 mg EPA+DHA, min. 300 mg total Omega-3 per g		●			15.85 190	50 1518 4.152 50 1518 4.420	●			●	●				●	
MEG-3® DHA Inf Food Oil Triglycerides, min 45 mg EPA, 220 mg DHA and min 280 mg total Omega-3 per g		●			18 190	50 1527 4.044 50 1527 4.420	●			●	●				●	
MEG-3® 30% B Powder Microencapsulated powder based on bovine gelatin, min. 150 mg – max. 220 mg EPA + DHA and min. 180 mg total Omega-3 per g					10	50 1622 8.332		●		●	●				●	
MEG-3® DHA rf Powder Microencapsulated powder based on fish gelatin, 132 mg DHA and min. 184 mg total Omega-3 per g		●			10	50 1631 5.322		●		●	●	●			●	
MEG-3® DHA B Powder Microencapsulated powder based on bovine gelatin, 132 mg DHA and min. 184 mg total Omega-3 per g					10	50 1622 7.322		●		●	●				●	
MEG-3® 26% H Powder Microencapsulated powder based on fish gelatin, min 144 mg – max 220 mg EPA+DHA and min 180 mg total Omega-3 per g		●			10	50 1624 4.322		●		●	●	●			●	
MEG-3® '10' n-3 INF Powder Beadlet powder consisting of DHA from fish in a corn starch coated matrix of fish gelatin and sucrose, min. 7% (70 mg) DHA per g		●			5	04 8039 8.304		●		●	●	●			●	
MEG-3® '10' n-3 INF Powder S/SD Spray dried powder consisting of DHA from fish in a matrix of modified food starch and sucrose, min. 7% (70 mg) DHA per g		●			5	50 0639 2.304		●		●	●	●			●	
MEG-3® '15' n-3 High DHA Powder S/SD Spray dried powder consisting of DHA from fish in a matrix of modified food starch and sucrose, min. 11% (110 mg) DHA per g		●			5	50 1163 9.304		●		●	●	●			●	
MEG-3® '10' n-3 Food Powder S/SD Spray dried powder of DHA and EPA from fish in a matrix of modified food starch and sucrose, min. 7% (70 mg) DHA + EPA per g		●			5	50 0952 9.304		●		●	●	●			●	

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MEG-3® (Marine Omega-3 Long Chain Polyunsaturated Fatty Acids) – Continued

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian
MEG-3® 1844EE Ethyl esters, min. 180mg EPA, 440mg DHA. 660mg total Omega-3 per g		●			190	50 1517 1.420	●			●				●		
MEG-3® 2718EE Ethyl esters, min. 270mg EPA, 180mg DHA. 500mg total Omega-3 per g		●			190	50 1520 1.420	●			●				●		
MEG-3® 2919EE Ethyl esters, min. 290mg EPA, 190mg DHA. 530mg total Omega-3 per g		●			190	50 1520 5.420	●			●				●		
MEG-3® 3025EE Ethyl esters, min. 300mg EPA, 250mg DHA. 600mg total Omega-3 per g		●			190	50 1520 9.420	●			●				●		
MEG-3® 3020EE Ethyl esters, min. 300mg EPA, 200mg DHA. 600mg total Omega-3 per g		●			190	50 1521 1.420	●			●				●		
MEG-3® 3223EE Ethyl esters, min. 320mg EPA, 230mg DHA. 665mg total Omega-3 per g		●			190	50 1528 4.420	●			●				●		
MEG-3® 3627EE Ethyl esters, min. 360mg EPA, 270mg DHA. 680mg total Omega-3 per g		●			190	50 1524 1.420	●			●				●		
MEG-3® 4618EE Ethyl esters, min. 460mg EPA, 180mg DHA. 700mg total Omega-3 per g		●			190	50 1525 2.420	●			●				●		
MEG-3® 5004EE Ethyl esters, min. 500mg EPA, 40mg DHA. 590mg total Omega-3 per g		●			190	50 1525 8.420	●			●				●		
MEG-3® Ultra High OMEGA EE Ethyl esters, min 480mg EPA, 230mg DHA, 740mg total Omega-3 per g		●			190	50 1634 8.420	●			●				●		
MEG-3® Ultra High DHA EE Ethyl esters, min 640mg DHA, 700mg total Omega-3 per g		●			190	50 1636 5.420	●			●				●		
MEG-3® Ultra High EPA EE Ethyl esters, min 710mg EPA, 730mg total Omega-3 per g		●			190	50 1636 6.420	●			●				●		
MEG-3® 1812rTG Triglycerides, min. 180mg EPA, 120mg DHA. 350mg total Omega-3 per g		●			190	50 1516 7.420	●			●				●		
MEG-3® 1048rTG Triglycerides, min. 100mg EPA, 480 mg DHA, 650 mg total Omega-3 per g		●			190	50 1590 6.420	●			●				●		
MEG-3® 2718rTG Triglycerides, min. 270mg EPA, 180mg DHA. 500mg total Omega-3 per g		●			190	50 1520 7.420	●			●				●		
MEG-3® 3223rTG Triglycerides, min. 320 mg EPA, 230 mg DHA, 640 mg total Omega-3 per g		●			190	50 1643 1.420	●			●				●		
MEG-3® 1812 TG Oil Triglycerides, min. 160mg EPA, 100mg DHA. 300mg total Omega-3 per g		●			190	50 1516 5.420	●			●				●		
MEG-3® 30% TG Oil Triglycerides, min. 260mg EPA + DHA. 300mg total Omega-3 per g		●			190	50 1519 8.420	●			●				●		

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ADDITIONAL INFORMATION | MEG-3® (omega-3 oils)

ROLE:

MEG-3® contains eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Recent research has shown these compounds to have triglyceride lowering activity, which may be helpful in reducing the risk of cardiovascular diseases. Depending on the EPA/DHA ratio, various health claims may apply.

FOOD SOURCES:

Fish (anchovy, sardines, mackerel, herring, tuna) and dietary supplements. Canadian data suggest 0.56 gm/100 kcal or at least 0.5% of energy.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Upgrade your vision, Improve your gut health, Enhance your mobility, Guard your heart, Essentials for early life, Essentials for kids & teens, Essentials for women, Essentials for men, Essentials for healthy aging, Optimize your weight, Power your performance, Nourish your beauty.

EU HEALTH CLAIMS:

- DHA and EPA contribute to the maintenance of normal blood pressure.
- DHA and EPA contribute to the maintenance of normal blood triglyceride levels.
- DHA contributes to maintenance of normal brain function.
- DHA contributes to the maintenance of normal blood triglyceride levels.
- DHA contributes to the maintenance of normal vision.
- EPA and DHA contribute to the normal function of the heart.
- DHA intake contributes to the normal visual development of infants up to 12 months of age.
- DHA maternal intake contributes to the normal brain development of the foetus and breastfed infants.
- DHA maternal intake contributes to the normal development of the eye of the foetus and breastfed infants.

US QUALIFIED HEALTH CLAIMS:

- Supportive, but not conclusive, research shows that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease. One serving of [Name of the food] provides [] gram of EPA and DHA omega-3 fatty acids [See nutrition information for total fat, saturated fat, and cholesterol content].

Note: Dietary supplements may declare the amount of EPA and DHA per serving in “Supplement Facts”, instead of making the declaration in the claim.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

PRODUCTS WITH PURPOSE

Nutraceuticals

All-Q® / Coenzyme Q10

Product and Description	Certifications				Pack Size (kg)	Product Code	Form			Main Application			Specific Application					
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian		
All-Q® (Coenzyme Q10) 10% CWS/S Beadlet™, cold water dispersible. Starch-based	●	●			5	50 0416 0.304		●										●
					25	50 0416 0.368												

†† Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling.

ADDITIONAL INFORMATION | Coenzyme Q10 (All-Q®)

ROLE:

Coenzyme Q10 (CoQ10) has antioxidant activity involved in energy metabolism in all cells in the body. Studies in individuals with cardiovascular disease, in particular those with heart failure and hypertension, report the most consistent improvement in symptoms when CoQ10 is taken as a supplement.

FOOD SOURCES:

Beef, chicken, pork, herring, and trout; lesser amounts in some vegetables such as broccoli and cauliflower.

HEALTH BENEFITS & SOLUTIONS:

Guard your heart, Essentials for men, Essentials for healthy aging, Power your performance.



Fabules® / Specialty emulsion for satiety – Naturally sourced

Product and Description	Certifications				Pack Size (kg)	Product Code	Form			Main Application			Specific Application					
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian		
Fabules® DE Fine powder, 33% functional lipid content	●	●			20	51 1400 0.341		●									●	●

ADDITIONAL INFORMATION | Specialty emulsion for satiety (Fabules®)

ROLE:

Fabules® is a patent-protected combination of palm and oat oil (both naturally occurring lipids) that is formulated in an emulsion. Its microstructure aids in early gut health and triggers an “appetite satisfied” signal to the brain, therefore helping people to manage their calorie intake. Fabules® can be incorporated in foods or marketed as a weight management supplement.

HEALTH BENEFITS & SOLUTIONS:

Optimize your weight.



*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.

Metafolin® / The naturally-occurring predominant form of folate

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian
METAFOLIN®	•	•			1 0.1	50 1557 1.270 50 1557 1.074		•		•	•					•

METAFOLIN® is a registered trademark of Merck KGaA, Darmstadt, Germany.

ADDITIONAL INFORMATION | The biologically active form of folate (Metafolin®)

ROLE:

Metafolin® is the biologically active form of folate as it is found in nature. Genetic variation impact on folate metabolism. Usage of L-5-MTHF (Metafolin®) generates independency of genetic variants of enzymes because it's a readily bioavailable folate vitamer, directly usable by the body. Metafolin® is directly involved in lowering homocysteine blood levels, apparently not masking vitamin B12 deficiency and presents no risk of an accumulation of unmodified folic acid in the body.

FOOD SOURCES:

Sprouted legumes (mung bean, lentil, chickpea, etc.), spinach, romaine lettuce, cauliflower, asparagus, broccoli, kale, cabbage, strawberries and other berries, oranges, grapefruit, and their juices, fermented foods (sauerkraut etc.).

HEALTH BENEFITS & SOLUTIONS:

Essentials for early life.

EU HEALTH CLAIMS:

- Metafolin® contributes to normal blood formation.
- Metafolin® contributes to normal homocysteine metabolism.
- Metafolin® contributes to a normal function of the immune system.
- Metafolin® contributes to normal maternal tissue growth during pregnancy.
- Metafolin® contributes to normal psychological function.
- Metafolin® contributes to normal cell division.
- Metafolin® contributes to the reduction of tiredness and fatigue.
- Metafolin® contributes to normal amino acid synthesis.



PeptoPro® / Dairy-based peptides – Naturally sourced

Product and Description	Certifications				Pack Size (kg)	Product Code	Form			Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian	
PeptoPro® Powder	•	•			15	50 0714 3.201		•		•	•				•	•	

ADDITIONAL INFORMATION | Dairy-based peptides (PeptoPro®)

ROLE:

PeptoPro® is a highly hydrolyzed enzymatic digest of casein, manufactured utilizing a proprietary mix of enzymes to provide a high-quality source of peptides with excellent taste. High levels of di- and tripeptides, in combination with a low level of free amino acids, provide PeptoPro® with excellent nutritional value, instant solubility and low levels of bitterness. Human studies have proven that PeptoPro® plays an important role in sports applications, such as endurance, performance and muscle recovery. PeptoPro® qualifies as a superior protein source to cover daily needs of protein.

FOOD SOURCES:

Dairy, specialized hydrolysates.

HEALTH BENEFITS & SOLUTIONS:

Enhance your mobility, Power your performance.

EU HEALTH CLAIMS:

- Protein contributes to a growth in muscle mass.
- Protein contributes to the maintenance of muscle mass.



resVida® / High-purity trans-resveratrol

Product and Description	Certifications				Pack Size (kg)	Product Code	Form			Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian	
resVida® Crystalline powder, min. 99% trans-resveratrol	•	•			1	50 1439 5.268											
					5	50 1439 5.304		•		•							
					20	50 1439 5.344										•	

ADDITIONAL INFORMATION | Trans-resveratrol (resVida®)

ROLE:

Resveratrol is a polyphenol produced by plants to protect them from environmental stress. It has antioxidant activity and is most known as the component in red wine that may confer heart health benefits in the French population, despite a high fat intake, i.e. the French Paradox. Recent studies demonstrate resveratrol mimics the effect of caloric restriction, the only known intervention to extend lifespan in mammals. Accordingly, resveratrol has been shown not only to extend the lifespan of aged mice on a high fat diet, but also to preserve the health of aging mice through maintenance of cardiac function, muscle function and blood sugar control.

FOOD SOURCES:

Wine, grapes, peanuts and berries.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Guard your heart, Essentials for women, Essentials for healthy aging.



geniVida® / High-purity genistein

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application					
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian	
geniVida® Crystalline powder, minimum 98.5% genistein	•	•			1	50 1632 4.268		•		•							•
					5	50 1632 4.304											

ADDITIONAL INFORMATION | High-purity genistein (geniVida®)

ROLE:

Genistein is an isoflavone found in soybeans, soy flour, soy milk, soy protein concentrate (water washed) and soy protein isolates, that has the ability to bind selectively to the estrogen alpha and beta receptors and modulate gene expression. geniVida® can aid in restoring the balance between the bone-building osteoblasts and the bone-dissolving osteoclasts and help to maintain healthy bone density in postmenopausal women. Genistein has also been clinically proven to reduce menopausal symptoms, including hot flashes.

FOOD SOURCES:

Soybeans, soy flour, soy milk, soy protein concentrate (water washed), soy protein isolates, miso, tempeh, tofu and foods made with these ingredients.

HEALTH BENEFITS & SOLUTIONS:

Enhance your mobility, Essentials for women, Essentials for men, Nourish your beauty



YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

PRODUCTS WITH PURPOSE

Human Milk Oligosaccharides (HMOs)

Human Milk Oligosaccharides (HMOs)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application				Specific Application				Shelf Life	Purity Level
	Kosher	Halal	DMF*	CEP			Amorphous Powder	Crystalline Powder	Pharma reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian		
GlyCare™ 2FL 9000	●	●			20	50 1655 2		●				●	●	●		●	5 years	At least 94%
GlyCare™ 2FL 9000 HA	●	●			20	50 1655 3		●				●	●	●		●	5 years	At least 94%
GlyCare™ 2FL 9000 KfP	●	●			20	50 1655 4		●				●	●	●		●	5 years	At least 94%
GlyCare™ 2FL 9000 S2	●	●			20	50 1660 9		●				●	●	●		●	5 years	At least 94%
GlyCare™ LNnT 9000	●	●			20	50 1656 1		●				●	●	●		●	5 years	At least 92%
GlyCare™ LNnT 9000 HA	●	●			20	50 1656 2		●				●	●	●		●	5 years	At least 92%
GlyCare™ LNnT 9000 S1	●	●			20	50 1661 1		●				●	●	●		●	5 years	At least 92%
GlyCare™ LNnT 9000 S2	●	●			20	50 1669 8		●				●	●	●		●	5 years	At least 92%
GlyCare™ 3SL 9001†	●	●			20	50 1656 7	●					●	●	●		●	5 years	At least 88%
GlyCare™ 6SL 9001†	●	●			20	50 1657 0	●					●	●	●		●	5 years	At least 90%
GlyCare™ 2FL/DFL 8001†	●	●			20	50 1656 0	●					●	●	●		●	5 years	At least 85%
GlyCare™ LNT 8001†	●	●			20	50 1656 5	●					●	●	●		●	5 years	At least 70%
GlyCare™ 2FL 8001	●	●			20	50 1718 1	●					●	●	●		●	5 years	At least 85%

Available upon regional regulatory approval. † Available for Early Life Nutrition per January 1st 2023.

ADDITIONAL INFORMATION | HMOs

ROLE:

HMOs are a collection of carbohydrate structures, naturally occurring in breast milk.

FOOD SOURCES:

HMOs are classified as nature-identical.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Improve your gut health, *with a potential role in* Empower your mind.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

PRODUCTS WITH PURPOSE

Carotenoids

CaroCare® / β-Carotene (Pro-Vitamin A) – Naturally sourced

Product and Description	Certifications				Pack Size (kg)	Product code	Form			Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian	Coloration
CaroCare® Nat. β-Carotene 1% CWS/M Powder, cold water dispersible. Based on medium chain triglycerides	●	●			5 20	50 1212 0.304 50 1212 0.341		●			●				●	●	Yellow
CaroCare® Nat. β-Carotene 10% CWS Star Beadlet ^{††} , cold water dispersible. Starch-based	●	●			5 20	50 1093 4.341		●			●				●	●	Orange
CaroCare® Nat. β-Carotene 10% CWS/S Spray-granulated powder, cold water dispersible. Starch-based	●	●			10	50 1484 2.141		●			●				●	●	Yellow-Orange to Orange
CaroCare® Nat. β-Carotene 20% CWS/S-TG Spray-granulated powder, cold water dispersible. Starch-based	●	●			10	50 1484 4.141		●		●	●				●	●	Yellow-Orange to Orange
CaroCare® Nat. β-Carotene 30% S Fluid suspension	●	●			5	50 1480 8.302	●			●	●				●	●	Yellow
CaroCare® Nat. β-Carotene 30% OS Fluid suspension	●	●			5 200	50 1401 4.302 50 1401 4.400	●			●	●				●	●	Yellow

†† Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

Quali®-Carotene / β-Carotene (Pro-Vitamin A)

Product and Description	Certifications				Pack Size (kg)	Product code	Form		Main Application			Specific Application					
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian	Coloration
β-Carotene Crystalline Ph API with specific service package for pharma registered applications	●	●		●	0.25	50 1434 4.258		●	●							●	
β-Carotene 1% CWS/M Powder, cold water dispersible. Based on medium chain triglycerides	●	●			5 25	50 1628 0.304 50 1628 0.368		●			●					●	Yellow
β-Carotene 3% CWS/M Powder, cold water dispersible. Based on medium chain triglycerides	●	●			5	50 0363 6.304		●			●					●	Yellow
β-Carotene 7% CWS Powder, cold water dispersible	●	●			10	04 8228 5.231		●			●						Yellow-Orange
β-Carotene 10% CWS Beadlet ^{††} , cold water dispersible	●	●			1 5 25	04 3482 5.268 04 3482 5.304 04 3482 5.368		●			●						Yellow-Orange to Orange
β-Carotene 10% CWS/S Beadlet ^{††} , cold water dispersible. Starch-based	●	●			5 20	04 8999 9.304 (Origin: Switzerland) 04 8999 9.314 (Origin: Switzerland)		●			●					●	"Yellow-Orange to Orange"
β-Carotene 10% CWS/S Spray-granulated powder, cold water dispersible. Starch-based	●	●			5	50 1576 7.304 (Origin: Spain)		●			●					●	"Yellow-Orange to Orange"



Quali®-Carotene / β-Carotene (Pro-Vitamin A) – Continued

Product and Description	Certifications				Pack Size (kg)	Product code	Form		Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian
BetaTab® 20% S Beadlet ^{††} , tablet grade. Starch-based	●	●			5 25	50 0400 4.304 50 0400 4.368		●	●						●	
BetaTab® 20% S Ph API with specific service package for pharma registered applications. Beadlet ^{††} , cold water dispersible	●	●		●	25	50 1435 2.368		●	●						●	
β-Carotene 15% LCS Powder, cold water dispersible	●	●			5 20	50 1577 6.304 50 1577 6.341		●			●				●	Low color saturation
β-Carotene 10% Emulsion Red Liquid emulsion	●	●			6	50 1253 8.147	●				●				●	Red
β-Carotene 10% EM Yellow Liquid emulsion	●	●			5	50 0242 7.301	●				●				●	Yellow
β-Carotene 5% EM K Liquid emulsion	●	●			5 25	50 1125 6.311 50 1125 6.356	●				●				●	Yellow
β-Carotene 2.5% Emulsion CC Liquid emulsion	●	●			6	50 1477 8.147	●				●				●	Yellow
β-Carotene 30% FS Fluid suspension	●	●			1 5 5	04 2723 3.266 04 2723 3.311 04 2723 3.294	●				●	●			●	Yellow
β-Carotene 30% FS Ph API with specific service package for pharma registered applications. Fluid suspension	●	●		●	5	50 1438 7.294	●		●						●	
β-Carotene 30% FS/SF Fluid suspension in sunflower oil	●	●			5	50 0023 8.311	●				●	●			●	Yellow
β-Carotene 22% HSS Fluid suspension, heat stable	●	●			20 ^{††}	04 6604 2.313	●				●	●			●	Yellow

†† Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

ADDITIONAL INFORMATION | β-Carotene

ROLE:

β-Carotene serves as an important source of vitamin A and is converted into vitamin A as the body needs it. The additional health promoting effects of β-Carotene may be due to its ability to act as an antioxidant when consumed at dietary intake levels.

FOOD SOURCES:

Dark green leafy vegetables and dark yellow / orange fruits and vegetables.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Upgrade your vision, Essentials for kids & teens, Essentials for men, Essentials for healthy aging, Essentials for Life, Essentials for vegetarians.

EU HEALTH CLAIMS:

- Vitamin A contributes to normal iron metabolism.
- Vitamin A contributes to the maintenance of normal mucous membranes.
- Vitamin A contributes to the maintenance of normal skin.
- Vitamin A contributes to the maintenance of normal vision.
- Vitamin A contributes to the normal function of the immune system.
- Vitamin A has a role in the process of cell specialization.



Apocarotenal (8'-apo-β-Carotenal)

Product and Description	Certifications				Pack Size (kg)	Product Code	Form			Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian	Coloration
Apocarotenal 1% CWS/M Powder, cold water dispersible. Based on medium chain triglycerides	●	●			5 25	50 0631 7.304 50 0631 7.368		●			●					●	Orange to Orange-Red
Apocarotenal 10% WS/N Beadlet††	●	●			1	04 8737 6.268		●			●						Orange to Orange-Red
Apocarotenal 20% S Fluid suspension	●	●			1 5	04 8093 2.266 04 8093 2.311	●				●					●	Yellow-Orange to Orange
Carotenal Solution #2 2% 8'-apo-β-Carotenal	●	●			20 20'	04 8227 7.313 (Origin: France) 04 8227 7.199 (Origin: USA)	●				●					●	Orange
Carotenal Solution #73 1.4% 8'-Apo-β-carotenal and 0.6% β-Carotene solution (70:30 ratio)		●			20 20'	04 805 4 1.313 (Origin: France) 04 805 4 1.199	●				●					●	Yellow-Orange

†† Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

ADDITIONAL INFORMATION | Apocarotenal

ROLE:

Apocarotenal may be used in some regions for its coloring properties.

FOOD SOURCES:

Citrus fruits and green vegetables such as oranges or spinach.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.

AstaSana™ / Astaxanthin

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian
AstaSana™ 5% CWS/S-TG Beadlet™, cold water dispersible	●	●			5	50 1637 8		●		●			●		●	Violet

†† Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

ADDITIONAL INFORMATION | Astaxanthin (AstaSana™)

ROLE:

Astaxanthin has antioxidant properties. Its antioxidant protection can complement the performance of other antioxidants in dietary supplements, making it an ideal addition to eye, heart, skin and immune health formulations.

FOOD SOURCES:

Astaxanthin is present in most red-coloured aquatic organisms, such as krills, algae (*Haematococcus pluvialis*), shrimps and yeast (*Phaffia rhodozyma*).

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Enhance your mobility, Upgrade your vision.



Canthaxanthin

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application					
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian	Coloration
Canthaxanthin 10% CWS/S Beadlet™, cold water dispersible. Starch-based	●	●			1	50 0525 6.268										●	Orange-Red to Red
					5	50 0525 6.304											
					20	50 0525 6.341											

†† Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

ADDITIONAL INFORMATION | Canthaxanthin

ROLE:

Canthaxanthin is pigment widely distributed in nature and may be used in some regions for its coloring properties.

FOOD SOURCES:

Green algae, crustaceans, and bioaccumulates in fish.

FloraGLO® / Lutein – Naturally sourced

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application				
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Food and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian
FloraGLO® Lutein 1% SD/S Powder, cold water dispersible. Starch-based	●	●			20	50 1514 9.341		●			●	●	●	●	●	Very low color saturation
FloraGLO® Lutein 5% CWS/S-TG Beadlett†, tablet grade and cold water dispersible. Starch-based	●	●			5	50 1206 6.304		●					●	●	●	Yellow
					25	50 1206 6.368 (Origin: Switzerland)										
					5†	50 1206 6.605										
					25†	50 1206 6.606 (Origin: USA)										
FloraGLO® Lutein 10% CWS/S-TG Beadlett††, tablet grade and cold water dispersible. Starch-based	●	●			5	50 1186 8.304		●					●	●	●	Yellow-Orange
					25	50 1186 8.368 (Origin: Switzerland)										
					5†	50 1186 8.605										
					25†	50 1186 8.606 (Origin: USA)										
FloraGLO® Lutein 10% SG-VG Spray-granulated powder, tablet grade and cold water dispersible. Starch-based	●	●			5	50 1595 3.304		●	●			●	●	●	Yellow to Yellow-Orange	
FloraGLO® Lutein 20% SAF Fluid suspension in safflower oil	●	●			1	50 1187 6.264	●						●	●	●	
					5	50 1187 6.294										
					20	50 1187 6.331 (Origin: France)										
					1†	50 1187 6.263										
					5†	50 1187 6.694										
					20†	50 1187 6.335 (Origin: USA)										
FloraGLO® OPTISHARP® 5:1 24% FS Fluid suspension, with a lutein:zeaxanthin ratio of 5:1	●	●			5	50 1589 6.294	●						●	●	●	
					20	50 1589 6.311										

FloraGLO® is a trademark of Kemin Industries, Inc. † Only for North America. †† Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.

ADDITIONAL INFORMATION | Lutein (FloraGLO®)

ROLE:

Lutein and Zeaxanthin are natural yellow pigments found in cellular membranes, which cannot be produced by the body, but rather must be absorbed from the diet. These carotenoids absorb blue light and act as free radical scavengers *in vitro*. Lutein and Zeaxanthin are naturally found in maternal placenta and cord blood, as well as in colostrum and breast milk; they are structural components of the human eye and brain.

FOOD SOURCES:

Dark green leafy vegetables and other yellow / orange fruits and vegetables, such as cabbage (outside leaves), watercress, spinach, parsley, greens, peas, broccoli, lettuce and pepper.

HEALTH BENEFITS & SOLUTIONS:

Empower your mind, Upgrade your vision, Essentials for early life, Essentials for kids & teens.



redivivo® / Lycopene

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application					
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian	Coloration
redivivo® (Lycopene) 10% CWS/S-TG Beadlet, tablet grade and cold water dispersible. Starch-based	●	●			5	50 0379 2.304		●		●	●					●	
redivivo® (Lycopene) 10% FS Fluid suspension	●	●			5	50 0020 3.294	●			●	●					●	
redivivo® 10% CWS/S-TG Spray granulated powder, tablet grade and cold water dispersible. Starch-based	●	●			5	50 1598 1.304 50 0379 2.304 (Origin Switzerland) 50 0379 2.358 (Origin Switzerland)		●		●	●					●	Orange-Red to Red

ADDITIONAL INFORMATION | Lycopene (redivivo®)

ROLE:

Lycopene is the carotenoid responsible for the red color in tomatoes and is the most abundant carotenoid in human serum. With its antioxidant activity, lycopene helps to protect our bodies from free radicals, which can not only cause damage to body cells but also play a role in serious illnesses. Several epidemiological studies have associated lycopene with a reduced risk of prostate cancer and cardiovascular disease.

FOOD SOURCES:

Tomato and a variety of red fruits and vegetables, such as watermelon, pink grapefruit and guava.

HEALTH BENEFITS & SOLUTIONS:

Guard your heart, Essentials for men, Essentials for healthy aging, Essentials for life, Nourish your beauty.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



OPTISHARP® / Zeaxanthin – Naturally sourced

Product and description	Certifications				Pack size (kg)	Product code	Form		Main application			Specific application					
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian	Coloration
OPTISHARP® Natural (Zeaxanthin) 5% CWS/S-TG Spray granulated powder, cold water dispersible. Starch-based	●	●			10	50 1579 9.141		●		●	●			●	●	●	
OPTISHARP® Natural (Zeaxanthin) 14% Safflower Oil Fluid suspension	●	●			1 25	50 1576 6.263 50 1576 6.298	●			●	●			●	●	●	

ADDITIONAL INFORMATION | Zeaxanthin (OPTISHARP®)

ROLE:

Zeaxanthin is, in addition to lutein, the only other major carotenoid specifically located in the macula of the eye. Zeaxanthin is the most potent antioxidant carotenoid found in the retina and acts as a filter and shield against the damaging, near-to-UV blue light from the sun. Higher dietary intake of foods rich in lutein and zeaxanthin has been associated with a reduced risk of macular degeneration and cataracts. Zeaxanthin cannot be synthesized by humans and must be taken from the diet. The recent findings of scientific studies point to a zeaxanthin role also for visual performance in healthy people.

FOOD SOURCES:

Dark green leafy vegetables and other yellow/orange fruits and peppers, persimmons, corn, spinach, turnip greens, collard greens, lettuce, kale, mandarin and tangerine.

HEALTH BENEFITS & SOLUTIONS:

Empower your mind, Upgrade your vision, Essentials for early life, Essentials for kids & teens.



YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

PRODUCTS WITH PURPOSE

Enzymes

Tolerase® G & Tolerase® L / Digestive enzymes

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application					
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegan	Vegetarian
Tolerase® G Prolyl oligopeptidase. Micro granulated powder, 580,000 PPI/g	●	●			5	50 1488 3.304		●		●							●
Tolerase® L Acid lactase. Micro granulated powder, 100,000 ALU/g	●	●			5	50 1454 9.304		●		●							●

ADDITIONAL INFORMATION | Digestive enzymes (Tolerase® G & Tolerase® L)

ROLE:

Tolerase® G is a micro granulated food enzyme preparation containing prolyl oligopeptidase. Some humans may lack enzymes which can fully digest proline-rich peptides, such as in gluten. Tolerase® G has been proven to degrade proline-rich gluten epitopes. It addresses the needs of consumers who want to reduce their dietary gluten exposure.

Tolerase® L is a micro-granulated food enzyme preparation containing acid lactase. Lactase is needed to digest lactose, which is the main carbohydrate source of dairy products. Since many adults don't produce enough lactase, lactose is not properly digested in the small intestine but fermented by the microbial flora in the large intestine. The resulting by-products cause diarrhoea, abdominal cramps, flatulence and nausea. The use of lactase can prevent these unpleasant side-effects of consuming dairy products. Acid lactase works especially well at low pH, making it particularly suitable to digest lactose in the stomach.

HEALTH BENEFITS & SOLUTIONS:

Improve your gut health.

EU CLAIMS:

- Lactase enzyme improves lactose digestion in individuals who have difficulty digesting lactose.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

PRODUCTS WITH PURPOSE

Minerals

Copper Sulfate

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Copper Sulfate SD 1.5% Cu An aqueous solution of mineral encapsulated with glucose syrup is atomized in a spray drier. Starch based. Contains min 1.5% Copper. Does not contain a flow agent, e.g. silicon dioxide.	●	●			20	50 1644 3.340		●	●	●	●	●		●	

ADDITIONAL INFORMATION | Copper Sulfate

ROLE:

Copper is an essential nutrient for the body. Together with iron, it enables the body to form red blood cells. It helps maintain healthy bones, blood vessels, nerves, and immune function, and it contributes to iron absorption. Sufficient copper in the diet may help prevent cardiovascular disease and osteoporosis.

FOOD SOURCES:

Found in highest amounts in protein foods like organ meats, shellfish, fish, nuts, and seeds as well as whole grains and chocolate.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Enhance your mobility, Guard your heart, Power your performance.

EU HEALTH CLAIMS:

- *Copper contributes to maintenance of normal connective tissues*
- *Copper contributes to normal energy-yielding metabolism*
- *Copper contributes to normal functioning of the nervous system*
- *Copper contributes to normal hair pigmentation*
- *Copper contributes to normal iron transport in the body*
- *Copper contributes to normal skin pigmentation*
- *Copper contributes to the normal function of the immune system*
- *Copper contributes to the protection of cells from oxidative stress*

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Ferrous Sulfate

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Ferrous Sulfate SD 3% Fe An aqueous solution of mineral, stabilized with citric acid, encapsulated with glucose syrup is atomized in a spray drier. Starch based. Contains min 3% Iron. Does not contain a flow agent, e.g. silicon dioxide.	●	●			20	50 1644 4.340		●		●		●	●		●

ADDITIONAL INFORMATION | Ferrous Sulfate

ROLE:

Iron is a mineral that the body needs for growth and development. Your body uses iron to make hemoglobin, a protein in red blood cells that carries oxygen from the lungs to all parts of the body, and myoglobin, a protein that provides oxygen to muscles. Your body also needs iron to make some hormones.

FOOD SOURCES:

Liver (but avoid this during pregnancy), red meat, beans, such as red kidney beans, edamame beans and chickpeas, nuts, dried fruit – such as dried apricots, fortified breakfast cereals, soy bean flour.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Guard your heart, Essentials for women, Power your performance, Essentials for vegetarians.

EU HEALTH CLAIMS:

- Iron contributes to normal cognitive function
- Iron contributes to normal energy-yielding metabolism
- Iron contributes to normal formation of red blood cells and haemoglobin
- Iron contributes to normal oxygen transport in the body
- Iron contributes to the normal function of the immune system
- Iron contributes to the reduction of tiredness and fatigue
- Iron has a role in the process of cell division

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Potassium Iodide

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Potassium Iodide SD 0.25% I An aqueous solution of mineral encapsulated with glucose syrup is atomized in a spray drier. Starch based. Contains min 0.25% Iodide. Does not contain a flow agent, e.g. silicon dioxide.	●	●			20	50 1644 5.340		●		●		●	●		●

ADDITIONAL INFORMATION | Potassium Iodide

ROLE:

Iodine helps the thyroid gland to make the hormone thyroxine. Thyroxine is important for the growth of bones and nerves, and how proteins, fats and carbohydrates are used in the body. Iodine is important before birth and in babies and young children. It is particularly important during pregnancy, when sufficient maternal intake is vital for healthy fetal and infant development.

FOOD SOURCES:

Beans, nuts, dairy foods, fish, seaweed and shellfish.

HEALTH BENEFITS & SOLUTIONS:

Empower your mind, Power your performance.

EU HEALTH CLAIMS:

- Iodine contributes to normal cognitive function.
- Iodine contributes to normal energy-yielding metabolism.
- Iodine contributes to normal functioning of the nervous system.
- Iodine contributes to the maintenance of normal skin.
- Iodine contributes to the normal production of thyroid hormones and normal thyroid function.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Manganese Sulfate

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Manganese Sulfate SD 0.1% Mn An aqueous solution of mineral encapsulated with glucose syrup is atomized in a spray drier. Starch based. Contains min 0.1% Manganese. Does not contain a flow agent, e.g. silicon dioxide.	●	●			20	50 1644 6.340		●	●	●	●	●	●	●	

ADDITIONAL INFORMATION | Manganese Sulfate

ROLE:

Manganese helps the body form connective tissue, bones, blood clotting factors, and sex hormones. It also plays a role in fat and carbohydrate metabolism, calcium absorption, and blood sugar regulation. Manganese is also necessary for normal brain and nerve function.

FOOD SOURCES:

Shellfish (mussels, oysters, clams), nuts (especially hazelnuts and pecans), brown rice, oatmeal, legumes (soybeans, kidney beans, chickpeas, lentils, peanuts), black tea, spinach.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Enhance your Mobility, Guard your heart, Power your performance.

EU HEALTH CLAIMS:

- Manganese contributes to normal energy-yielding metabolism.
- Manganese contributes to the maintenance of normal bones.
- Manganese contributes to the normal formation of connective tissue.
- Manganese contributes to the protection of cells from oxidative stress.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



Zinc Sulfate

Product and Description	Certifications				Pack Size (kg)	Product Code	Form		Main Application			Specific Application			
	Kosher	Halal	DMF*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Vegetarian
Zinc Sulfate SD 3% Zn An aqueous solution of mineral encapsulated with glucose syrup is atomized in a spray drier. Starch based. Contains min 3% Zinc. Does not contain a flow agent, e.g. silicon dioxide.	●	●			20	50 1644 7.340		●	●	●	●	●	●	●	

ADDITIONAL INFORMATION | Zinc Sulfate

ROLE:

Zinc, a nutrient found throughout your body, helps your immune system and metabolism function. Zinc is also important to wound healing and your sense of taste and smell.

FOOD SOURCES:

Oysters, but it's also plentiful in red meat and poultry. Other good sources are beans, nuts, crab, lobster, whole grains, breakfast cereals, and dairy products.

HEALTH BENEFITS & SOLUTIONS:

Optimize your immunity, Empower your mind, Upgrade your vision, Enhance your mobility, Guard your heart, Power your performance.

EU HEALTH CLAIMS:

- Zinc contributes to normal DNA synthesis.
- Zinc contributes to normal acid-base metabolism.
- Zinc contributes to normal carbohydrate metabolism.
- Zinc contributes to normal cognitive function.
- Zinc contributes to normal fertility and reproduction.
- Zinc contributes to normal macronutrient metabolism.
- Zinc contributes to normal metabolism of fatty acids.
- Zinc contributes to normal metabolism of vitamin A.
- Zinc contributes to normal protein synthesis.
- Zinc contributes to the maintenance of normal bones.
- Zinc contributes to the maintenance of normal hair.
- Zinc contributes to the maintenance of normal nails.
- Zinc contributes to the maintenance of normal skin.
- Zinc contributes to the maintenance of normal testosterone levels in the blood.
- Zinc contributes to the maintenance of normal vision.
- Zinc contributes to the normal function of the immune system.
- Zinc contributes to the protection of cells from oxidative stress.
- Zinc has a role in the process of cell division.

*DMF / Pharma registered OTC (Over the Counter) / Rx (Prescription) statuses must be checked with local DSM Regulatory Affairs team in your closest office. The applicability of the portfolio for pharmaceutical application is subject to local approval.



YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

PRODUCTS WITH PURPOSE

Active Pharmaceutical Ingredients (APIs)

Active Pharmaceutical Ingredients (APIs)

Product code	Product
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Vitamin A

04 2187 1	Dry Vitamin A Palmitate, Type 250 CWS/F (tocopherol)
50 1754 5	Retinyl Palmitate 250 CWS/F PH**
04 2401 3	Vitamin A Palmitate 1.7 MIU/g (BHA/BHT)
04 2400 5	Vitamin A Palmitate 1.7 MIU/g*
50 1626 2	Retinyl Palmitate 1.7 MIU/g Ph**
50 1227 9	Dry Vitamin A Acetate 500 B

Vitamin E

50 1657 7	Dry Vitamin E 50% CWS/S Ph
04 2008 5	DL-alpha-Tocopheryl Acetate*
50 1626 0	dl-a-Tocopheryl Acetate Ph**
04 1027 6	DL-alpha-Tocopherol
50 1674 1	all-rac-alpha-Tocopherol Ph**

Vitamin D

50 1621 2	Dry Vitamin D3 100 SD/S Ph
50 1647 3	Dry Vitamin D3 100 CWS Ph
50 1752 4	Vitamin D3 1.0 MIU/g* Ph
50 1157 4	Vitamin D3 1.0 MIU/g
50 1626 3	Vitamin D3 Crystalline Ph

Vitamin K1

04 3492 2	Dry Vitamin K1 5% SD
04 3501 5	Vitamin K1
50 1322 4	Vitamin K1 API (US DMF only)

* The applicability of our portfolio for pharmaceutical application is subject to local approvals. Please check the status with local DSM Regulatory Affairs team in your closest office.

**Pharma product code to be launched within 12 months period.

Product code	Product
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Vitamin B1

04 2947 3	ROCOAT Thiamine Mononitrate 33 1/3%
50 1625 7	Thiamine Hydrochloride Ph
04 1894 3	Thiamine Mononitrate

Vitamin B2

TBD	Riboflavin Universal PH**
50 1626 1	Riboflavin 5'-Phosphate Ph
04 7040 6	Riboflavin Universal

Vitamin B3

04 8784 8	Niacinamide
50 1629 1	Niacinamide Ph (US DMF only)**

Vitamin B5

TBD	Calcium D-Pantothenate Ph
04 1267 8	Calcium D-Pantothenate**
50 1625 8	D-Panthenol Ph

Vitamin B6

04 2945 7	ROCOAT Pyridoxine Hydrochloride 33 1/3%
50 1626 5	Pyridoxine Hydrochloride Ph (origin: China)
50 1646 0	Pyridoxine Hydrochloride Ph (origin: Germany)

Vitamin B7

50 1165 5	D-Biotin*
50 1626 4	D-Biotin Ph**

Vitamin B9

50 1625 9	Folic Acid Ph
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Product code	Product
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Vitamin B12

50 1251 1	Vitamin B12 1% SD
04 2909 0	Vitamin B12 0.1% WS
04 2915 5	Vitamin B12 Crystalline
50 1630 0	Vitamin B12 Crystalline Ph (US DMF)

Vitamin C

04 0809 3	Ascorbic Acid Fine Granular
04 2246 0	Ascorbic Acid Fine Powder*
50 1645 0	Ascorbic Acid Fine Powder Ph**
50 1625 5	Ascorbic Acid Ph
TBD	Calcium Ascorbate Ph**
04 1944 3	Calcium Ascorbate
50 1625 6	Sodium Ascorbate Ph
50 0976 6	Ascorbic Acid Ultra Fine Powder
04 2511 7	Coated Ascorbic Acid, Type EC
50 0774 7	Ascorbic Acid 95% Granulation
50 0774 7	Ascorbic Acid 95% Granulation**
TBD	Ascorbic Acid 95% Granulation Ph

Beta-Carotene

50 1434 4	β-Carotene Crystalline Ph
50 1438 7	β-Carotene 30% FS Ph
50 1435 2	BetaTab 20% S Ph

Cannabinoid APIs

50 1714 2	BSPG CBD API
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Lipid API Intermediates

Eicosapentaenoic Acid (EPA)	Customized concentrations and combinations to meet your needs. Contact your DSM Account Manager for details.
Docosahexaenoic Acid (DHA)	
Arachadonic Acid (ARA)	

ADDITIONAL INFORMATION | Labeling

KOSHER AND HALAL CERTIFICATION

Typically our products have Kosher (OU) and the main Halal certifiers (IFANCA, HFCE, MUI). We occasionally use other certification organization as well, but these are typically for special cases or back-up. Information about the other available certificates may be available upon request.

SPECIFIC PRODUCT INFORMATION

Product Data Sheets and Safety Data Sheets are available for all products listed in this catalogue. They contain information on product description and identification, specification and stability and storage conditions.

Some of the listed products are used either as vitamins (nutrients / Active Pharmaceutical Ingredients / excipients) or as food additives for technological purposes; some of them serve both purposes and are authorized in most countries. However, there are local regulations according to which their use may be restricted. It is therefore advisable to consult the corresponding regulation.

For further information on our products (local availability and prices), please contact the DSM Nutritional Products' office nearest to you or one of the addresses listed on the back cover.

RSPO CERTIFICATION

DSM made a commitment in 2013 to source all palm oil and palm oil derivatives in a sustainable manner by either using GreenPalm certificates under "Book & Claim" scheme or Mass Balance certification.

YOUR END-TO-END PARTNER

PRODUCTS **CUSTOMIZED SOLUTIONS** **EXPERT SERVICES**

With our broad service offerings, customers get an integrated partner, from concept to consumer.

PRODUCTS

- Active pharmaceutical ingredients (APIs)
- Carotenoids
- Digestive enzymes
- Human milk oligosaccharides (HMOs)
- Hydrocolloids
- Nutraceuticals
- Nutritional lipids
- Probiotics and prebiotics
- Vitamins

CUSTOMIZED SOLUTIONS

- Coloration solutions
- Market-ready solutions
- Personalized nutrition solutions
- Premix solutions
- Shelf-life solutions

EXPERT SERVICES

- Application and technical services
- Innovation and R&D services
- Insights and marketing services
- Regulatory and quality services
- Scientific services

Our products can make yours stronger. Learn how at [DSM-Products.com](https://www.dsm-products.com).

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