



Where others  
see products,  
we see purpose.

We see success in keeping  
the world's growing  
population healthy.

Human Nutrition  
and Health Solutions

**We work with you  
to create visionary,  
future-proof, and  
purposeful health and  
nutrition solutions.**



## ***Dear partners,***

At DSM, we understand the role nutrition and your products play in the world. Every time you deliver a new product to the market, you help our planet's growing population stay healthy and ready to meet whatever challenge life provides. **You are creating products with purpose.**

### **As your reliable, end-to-end partner, we share that goal.**

Because where others see products, we see purpose. We want to contribute to a brighter world and better nutrition for all through science and our sustainability engagements. That's why we endeavor to see the purpose behind every product; when we do, we make a bigger difference in the lives of people all around the world.

Every product launch has challenges. We have solutions. It's the reason we're an ideal partner to co-innovate your products **at every stage of development, from concept to consumer.** When we share that purpose-led vision with you, we create nutritional products that not only address consumer needs and meet your goals, but also exceed them. We build future-proof solutions that go beyond the ordinary to, ultimately, create brighter lives for all.

We hope to help you innovate products with purpose.

Kind regards,

***Philip Eykerman***  
***President, DSM Human Nutrition and Health***



# Our values, your purpose.

## **Responsibility. *Safety-Health-Environment***

We ensure ethical business conduct and operate with integrity. We are committed to continuously improve performance in the fields of safety, health, and environmental protection. Our ambition is to be injury- and accident-free.

## **Sustainability. *People-Planet-Profit***

We improve the quality of people's lives by contributing to a healthier planet and society while driving profitable growth.

## **Value. *Delivering to multiple stakeholders***

Delivering value means we use our speed, expertise, and innovation to deliver results, meeting the needs and earning the trust of customers, employees, shareholders, communities, and wider society.



## Our vision for nutrition and climate change: healthy diets for all within planetary boundaries

### Tackling malnutrition



We aim to help end all forms of malnutrition by 2030. For decades, DSM's Nutrition Improvement team has been committed to achieving a brighter future for everyone through both innovative nutritional solutions and a wide variety of collaborations and partnerships with multi-sector partners. This includes United Nations agencies like the World Food Programme and UNICEF, and non-profit organizations such as World Vision International, Partners in Food Solutions, and Sight and Life.

### Advocating



We work with a broad and diverse range of organizations across the world to shape and influence the nutrition agenda. We do so through different coalitions and partnerships addressing the different forms of malnutrition, as well as shifting the food system to healthy and sustainable production and consumption. This includes our long-standing partnership with the UN World Food Programme, which is the world's largest humanitarian organization; the World Business Council for Sustainable Development; and the World Economic Forum.

### Climate change



We minimize our use of raw materials and energy, reducing our greenhouse gas and nitrous oxide emissions, through the continuous improvement of working methods and production processes in our certified manufacturing sites. In 2018, we raised the bar with new targets aligned with the Paris Agreement. Our goal? To reach net-zero emissions by 2050.

To see our values in action, visit [DSM-Sustainability.com](https://www.dsm-sustainability.com).

# Sustainability is our priority.

We're contributing to all 17 Sustainable Development Goals (SDGs) adopted by the United Nations, but we strive hard to deliver on 5 in particular—areas where we believe our company can yield the most influence. *Find out more information at [DSM-SDGs.com](https://www.dsm.com/sdgs).*

Increasingly, consumers look for more natural foods, a demand linked to a desire for healthier, sustainably produced nutrition. According to DSM's 2019 study of global health concerns, natural ingredients are the most sought-after on-pack information in the world.

Our growing portfolio of nutritional ingredients includes naturally sourced extracts from plants, animals, minerals, or microbiological sources and man-made ingredients that are identical to those found in nature.

Through our ability to produce a range of naturally sourced and nature-identical nutritional solutions, we provide our customers with complete transparency and our planet with sustainable food-sourcing practices.

We are transparent in sharing sustainability data. When we say we care, people know we mean it.



Our commitment to sustainability  
has been recognized by:



To learn more, visit [DSM-SustainabilityPartners.com](https://www.DSM-SustainabilityPartners.com).

# Where others see products, we see purpose.

Whether it's providing regulatory expertise to a pharmaceutical's launch plan or fortifying dairy products with vitamins, DSM is built to partner with you, no matter what segment of the nutrition market or stage of the product life cycle you are in.



## Food and Beverage

We make it possible for our customers to add value to their brands through solutions that address the increasingly complex consumer demand for more appealing, tastier, and healthier food and beverages that are planet-friendly.



## Nutrition Improvement

We make it possible for our customers to tackle micronutrient deficiencies for the most vulnerable populations, creating brighter futures for them, their children, and societies.



## Dietary Supplements

We make it possible for our customers to continuously innovate and differentiate their portfolio, inspiring consumers to rethink health as a priority.



## Early Life Nutrition

We make it possible for our customers to develop efficacious and safe solutions that support the optimal development of children.



## Medical Nutrition

We make it possible for our customers to develop new delivery formats that are palatable and compliant to medical advice in order to help improve standards of care and quality of life for patients and the elderly.



## Pharmaceuticals

We make it possible for our customers to produce efficient and safe therapeutic innovations that help keep the world's growing population healthy and improve the quality of patients' lives.





# Keeping the world's growing population healthy.

Whoever they are, wherever they come from, people need nutrition to live healthy, fulfilling lives. We designed our portfolio of Health Benefit Solutions with consumer-centric data intended to help you launch products that deeply resonate with consumers, giving you an edge in the marketplace.

## Health Benefit & Solutions



### Targeted Health

Our Targeted Health Benefit Solutions focus on specific areas of health that reflect key consumer trends.



### Life's Essentials

Life's Essentials Solutions focus on the specific needs of consumers, both by gender and age.



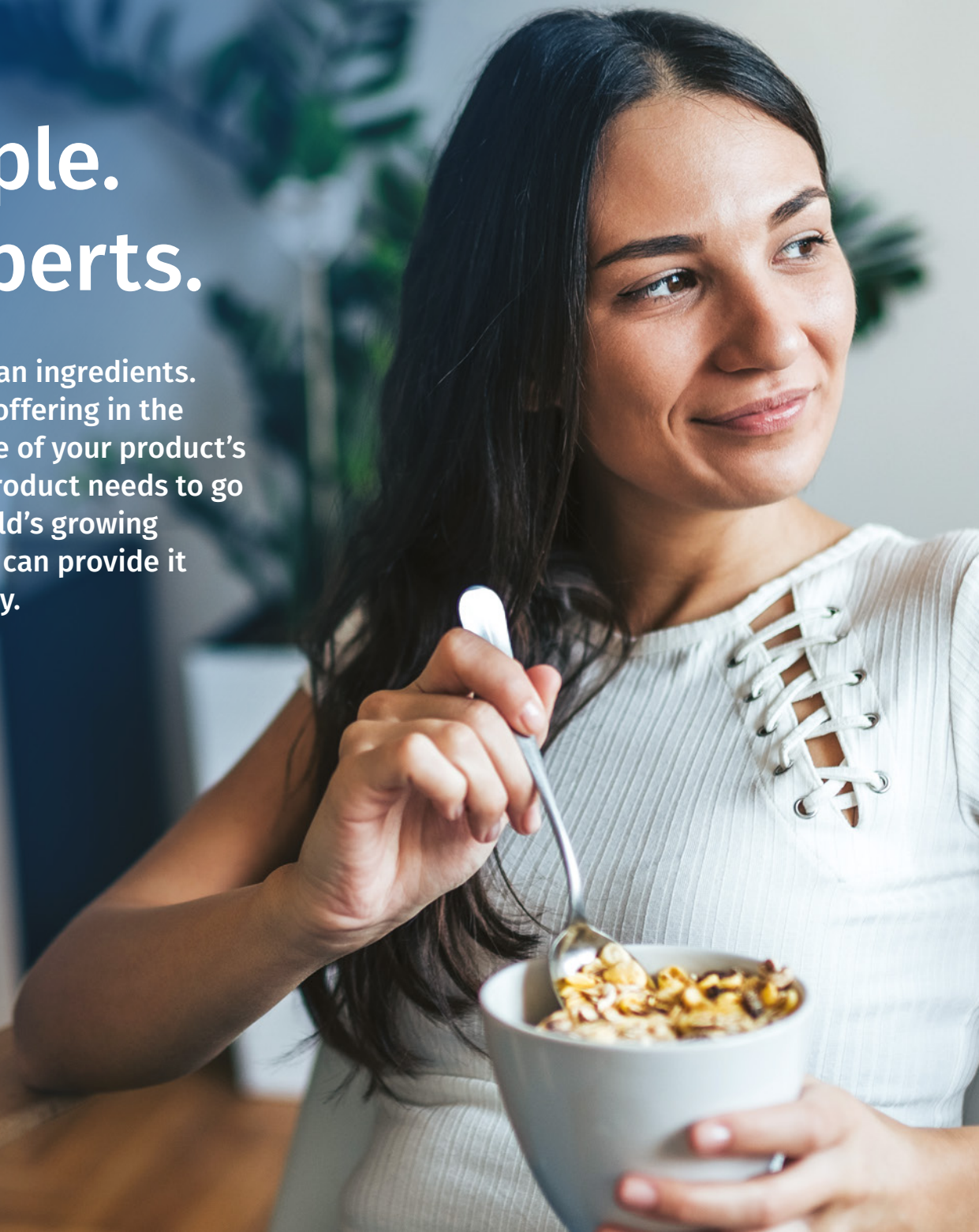
### Lifestyle

Lifestyle Health Solutions address consumers' lifestyles, including diet preferences, physical performance, and healthy appearance.

See how our Health Benefit Solutions can transform your products at [DSM-HealthBenefitSolutions.com](https://www.DSM-HealthBenefitSolutions.com).

# Inspired by people. Delivered by experts.

When you partner with DSM, you get more than ingredients. You get a reliable partner with the broadest offering in the industry. You get expert advice at every stage of your product's development. And you get everything your product needs to go from an idea to a product that keeps the world's growing population healthy. Whatever you need, DSM can provide it safely, efficiently, and with the highest quality.



With DSM, you get a reliable, end-to-end, innovative, purpose-led partner powered by experts to deliver science-backed nutrition and health products and quality customized solutions.

## **YOUR END-TO-END PARTNER**

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

### **PRODUCTS**

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

***To learn more jump to page 12***

### **CUSTOMIZED SOLUTIONS**

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

***To learn more jump to page 14***

### **EXPERT SERVICES**

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

***To learn more jump to page 16***

A close-up photograph of a young boy with light brown hair and blue eyes, wearing a blue and white striped shirt. He is looking directly at the camera while drinking from a glass with a straw. The background is a soft, out-of-focus outdoor setting. The overall color palette is dominated by blues and whites.

**YOUR END-TO-END PARTNER**

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

**Our products  
can make  
yours stronger.**

Learn how at  
[DSM-Products.com](https://www.DSM-Products.com).

# Products

When you partner with DSM, you get access to not only the broadest array of products, but also the experts who design, build, and produce them.

## Active Pharmaceutical Ingredients (APIs)

DSM brings more than 70 years of experience producing vitamin APIs and is the global leader in the production of EPA and DHA derived from either sustainable marine sources or microbial fermentation.

## Carotenoids

We offer a wide range of highly functional, naturally sourced, and nature-based carotenoids, ranging from beta-carotene to lutein and zeaxanthin.

## Digestive enzymes

We offer solutions for healthy digestion and optimal nutrient breakdown.

## Human milk oligosaccharides (HMOs)

Naturally occurring in breast milk, HMOs are a collection of complex carbohydrate structures that support both immune and cognitive development thanks to their action on rebalancing the gut microbiome.

## Hydrocolloids

Texture solutions help you deliver innovation that blends nutrition and performance.

## Nutraceuticals

Our nutraceuticals fit easily into people's daily diets and offer positive, lifestyle-oriented wellness and nutritional benefits.

## Nutritional lipids

With a portfolio that includes market-leading products in both fish- and algae-sourced omega-3s, as well as arachidonic acid (ARA), the primary omega-6 fatty acid in the brain, DSM is the global leader in providing nutritional lipid solutions.

## Probiotics and prebiotics

We offer solutions that foster and support a diverse and healthy microbiome.

## Vitamins

As a leader in vitamin development and manufacturing for more than 70 years, DSM can offer you the broadest portfolio of fat-soluble and water-soluble vitamins in the industry.

With our large portfolio of products and expertise, you can overcome any issues that arise with product development and launches. Together, we'll look at your consumers from a lifestyle, health condition, or age demographic perspective, then deliver products that nourish, protect, and keep them healthy. Besides product specifications, DSM provides clear statements concerning, for example, GMO ingredients, BSE/TSE, residual solvent limits, and the absence of allergenic potentials. In many cases, kosher and halal certificates issued by highly reputable international organizations are available. These efforts are complemented by strict change control procedures and ISO 9001 certification for our entire business. Our dietary and food ingredients are manufactured following HACCP concepts.

A man and a young girl are in a grocery store, looking at a shelf of products. The girl is reaching up to touch a product on the shelf. The man is standing behind her, looking at the same product. The background is a blurred grocery store aisle with shelves of products.

**YOUR END-TO-END PARTNER**

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

**Every product  
launch has unique  
challenges.  
We have unique  
solutions.**

Learn more about how we can  
help you come to market at  
[DSM-CustomizedSolutions.com](https://www.DSM-CustomizedSolutions.com).

# Customized solutions

We understand that developing and launching products is time-consuming and complex. We also know how to build our people-inspired insights into products consumers love. That's why we go beyond just products to offer turnkey, customized solutions designed to help bring you to market faster, more efficiently, and with enduring success. Our customized solutions services include:

## Coloration solutions

In today's market, consumer interest and demand for natural ingredients continue to grow. To help meet this need, DSM delivers natural and nature-based colors to the food and beverage industry. Our coloration solutions are tailor-made to meet your needs and uniquely positioned to address common challenges of supply, cost, quality, application, and regulatory requirements. Our color solutions include more than colors.

## Market-ready solutions

Our market-ready solutions experts can help get you to market faster with finished products your customers love. Every solution can be tailored into fully customized, finished products, dramatically simplifying your supply chain.

## Personalized nutrition solutions

Supported by partnerships and investments, DSM offers end-to-end solutions for every step in the personalized nutrition value chain. We cover everything from measurement and monitoring, data acquisition, analysis, and recommendation to delivery of personalized nutritional products and live coaching. All of these elements are available as a modular and customizable platform for your target audience.

## Premix solutions

Our premix solutions are designed to build tailored products that are as unique as the customers you serve. DSM formulation experts partner with you to design innovative premixes that target specific health conditions, lifestyles, consumer groups, or age demographics without compromising your finished product's taste, texture, or appearance.

## Shelf-life solutions

DSM's custom antioxidant solutions can help increase shelf life and decrease food waste in a more natural, scientifically proven, and effective way. Our unique analytical methods help define the optimal amount and combination of antioxidants for your products, saving you time and money at every step.

## YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

# With DSM, you get all the services you need to bring a product to market.

To learn more about our expert services, visit [DSM-ExpertServices.com](https://www.dsm-expertservices.com).



# Expert services

It takes more than ingredients to bring a product to market. With an expert team of specialists at your disposal, DSM is an ideal partner to help bring your next top-selling product from idea to store shelf. As part of our expert services, we can help with:

## **Application and technical services**

Our scientists can develop formulas or recommend unique nutrients that target specific health conditions, age demographics, or lifestyles, ensuring the nutrients we select resonate with your target audience. We ensure the dosage we recommend is efficacious, and the formulations we develop address key issues, such as shelf life, unfavorable interactions, heat, and light.

## **Innovation and R&D services**

We offer a wide portfolio of products, including premixes, carotenoids, vitamins, nutritional lipids, nutraceuticals, and hydrocolloids. Our global research and development team is constantly innovating new ways to deliver high-quality ingredients in smarter, safer, more efficient, and more sustainable ways.

## **Insights and marketing services**

Our globally present marketing and sales teams can help you create brands and products you're proud to stand behind. From marketing and positioning to research and launch support, we're at your side as you build your next top seller.

## **Regulatory and quality services**

For DSM, quality comes first. We assure our customers that our products and services meet high quality and safety standards. We also understand the future of your company's integrity is at stake with each product launch. That's why we offer regulatory and legal advice to help you navigate the complex and ever-changing landscape. We liaise with regulatory authorities and government agencies across the globe to support product registration and claim substantiation, giving you the peace of mind you need as you come to market.

## **Scientific services**

DSM's scientific services provide expert support around life sciences, particularly nutrition sciences, tailored to your product applications and target consumers. We elaborate the scientific substantiation to meet the requirements of different stakeholder groups, including academia, the scientific community, regulatory experts, healthcare professionals, and consumers. Our science-led advice enables you to design and market nutritional solutions based on health benefit acumen.

# Driven beyond expectations.

Creating purpose-led products takes more than ingredients. That's why we're committed to adding value to yours at every stage of development, from concept to consumer.

See what a DSM partnership can mean for you.



To get started, visit  
**[PartnerWithDSM.com.](https://PartnerWithDSM.com)**

**Partner with DSM for access to our broad portfolio of science-backed products, customized solutions, and expert services aimed at reliably supporting your entire product life cycle, from concept to consumer.**

Visit [PartnerWithDSM.com](https://PartnerWithDSM.com) to get started.

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# 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
<b>Vitamin A Acetate 1.5 MIU/g</b> 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	●			●	●		●	●	
<b>Vitamin A Palmitate 1.0 MIU/g</b> 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	●			●	●		●	●	
<b>Vitamin A Palmitate/M 1.0 MIU/g</b> 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	●			●	●		●	●	
<b>Vitamin A Palmitate 1.0 MIU/g</b> 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	●			●	●		●	●	
<b>Vitamin A Palmitate 1.7 MIU/g</b> 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	●		●	●			●	●	
<b>Vitamin A Palmitate 1.7 MIU/g</b> 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	●			●	●	●	●	●	
<b>Vitamin A Palmitate 1.7 MIU/g</b> 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	●		●	●	●		●	●	
<b>Retinyl Palmitate 1.7 MIU/g Ph***</b> 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	●		●					●	
<b>Vitamin A Palmitate 1.0 MIU/g and Vitamin D3 100,000 IU/g</b> 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	●			●	●		●	●	
<b>Vitamin A Water-miscible Type 100</b> 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	●			●				●	
<b>Vitamin A + D3 Water-miscible Type 100/20</b> 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	
<b>Dry Vitamin A Acetate 500 AF</b> 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		●		●						●
<b>Dry Vitamin A Acetate 500 B</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		●		●		●				●
<b>Dry Vitamin A Acetate 325 CWS/A</b> 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)										
<b>Dry Vitamin A Acetate 325 N</b> 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										
								●		●		●		●		●
<b>Dry Vitamin A Palmitate, Type 250 CWS</b> 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										
<b>Dry Vitamin A Palmitate, Type 250 CWS/F</b> 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										
<b>Dry Vitamin A Palmitate 250 S/N</b> 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)										
<b>Dry Vitamin A Palmitate 250 S/N-B</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 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.



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

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### **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
<b>Vitamin D3 1.0 MIU/g</b> 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
<b>Vitamin D3 Crystalline</b> 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)		●	●					●	(●)
<b>Vitamin D3 Crystalline Ph</b> 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)		●	●						(●)
<b>Dry Vitamin D3, Type 100 CWS</b> 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									
<b>Dry Vitamin D3 100 CWS Ph</b> API with specific service package for pharma registered applications	●	●	●	●	5	50 1647 3.304		●	●						(●)
					25	50 1647 3.368									
<b>Dry Vitamin D3 100 CWS/AM</b> 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		●	●	●					(●)
<b>Dry Vitamin D3 100 N</b> 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		●	●	●	●				(●)
<b>Dry Vitamin D3 100 SD/S</b> 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									
<b>Dry Vitamin D3 100 SD/S</b> 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		●	●	●	●	●	●	●	(●)
<b>Dry Vitamin D3 100 SD/S Ph</b> 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.

\*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 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.*



## 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
<b>dl-α-Tocopherol</b> 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									
<b>dl-α-Tocopheryl Acetate</b> 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									
<b>dl-α-Tocopheryl Acetate Ph***</b> 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
<b>Dry Vitamin E 15% CC</b> Spray dried, cold water dispersible. Starch-based. Crystal clear. Contains min. 15% all-rac-α-tocopheryl acetate	●	●			15	50 0128 5.281		●			●				●
<b>Dry Vitamin E 50% CWS/S</b> 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)									
<b>Dry Vitamin E 50% CWS/S Ph</b> Spray dried, cold water dispersible. Contains min. 50% all-rac-α-tocopheryl acetate	●	●	●	●	20	50 1657 7.341		●	●						●
<b>Dry Vitamin E 50%, Type SD</b> Spray dried. Contains min. 50% all-rac-α-tocopheryl acetate					15	50 1407 7.281		●		●					
<b>Dry Vitamin E 50% N</b> 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		●		●	●	●	●		●
<b>Dry Vitamin E Acetate 50% Type SD</b> Spray dried. Contains min. 50% all-rac-α-tocopheryl acetate					50***	04 8855 0.395		●		●					
<b>Dry Vitamin E 75 HP</b> 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
<b>d-α-Tocopheryl Acetate</b> Content of RRR-α-tocopheryl acetate acc. to USP: 96.0–102.0%	●	●			20	04 8657 4.178									
					190	04 8657 4.422	●			●	●			●	
<b>Natural Vitamin E SF</b> 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	●			●	●			●	
<b>Dry Natural Vitamin E SF</b> 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		●		●	●			●	
<b>Dry Vitamin E 700 NS</b> 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		●		●				●	
<b>Dry Vitamin E Acetate 950 NS</b> 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.

\*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 / 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
<b>Mixed Tocopherols 95</b> 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	●			●	●				●
<b>Mixed Tocopherols 70 IP</b> 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	●			●	●				●
<b>Dry Mixed Tocopherols 30% IP</b> 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
<b>Vitamin K1</b> Oily liquid	●	●		●	0.1 1	04 3501 5.246 04 3501 5.264	●		●	●		●	●		●
<b>Vitamin K1 API*</b> Oily liquid	●	●	●		1	50 1322 4.264	●		●						●
<b>Dry Vitamin K1 1% N</b> Spray dried. Starch based. Contains min 1% Vit K1 Does not contain a flow agent, e.g. silicon dioxide.	●	●			20	50 1636 7.341		●		●	●	●	●		●
<b>Dry Vitamin K1 5% SD</b> 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.





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# 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
<b>Thiamine Hydrochloride</b>	●	●			20	04 1303 8.341		●		●	●	●	●		●
<b>Thiamine Hydrochloride Ph</b> API with specific service package for pharma registered applications	●	●	●	●	20	50 1625 7.341		●	●						●
<b>Thiamine Mononitrate</b>	●	●	●	●	20	04 1894 3.341		●	●	●	●	●		●	
<b>ROCOAT® Thiamine Mononitrate 33 1/3%</b> 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
<b>Riboflavin Universal</b>	●	●	●	●	10	04 7040 6.231		●	●	●	●	●	●	●	●
<b>Riboflavin Universal Fine Powder</b>	●	●			2x2.5 5	50 0861 1.186 50 0861 1.304		●		●	●	●	●	●	●
<b>Riboflavin 5'-Phosphate Sodium</b>	●	●			1 5 25	04 2141 3.608 04 2141 3.605 04 2141 3.672		●		●		●			●
<b>Riboflavin 5'-Phosphate Ph</b> API with specific service package for pharma registered applications	●	●	●	●	1 5	50 1626 1.608 50 1626 1.605		●	●						●
<b>Riboflavin Tablet Grade</b>	●	●			10	04 7029 5.231		●		●					●
<b>ROCOAT® Riboflavin 33 1/3% Coated</b>	●	●			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	
<b>Niacinamide</b>	●	●	●	●	20	04 8784 8.340										
					20***	04 8784 8.202										
<b>Niacin</b>	●	●			20	50 1083 7.340										
					500	50 1083 7.429										
<b>Niacinamide Ph</b>			●	●	20	50 1629 1.340			●							
<b>Niacinamide FCC</b>	●	●			25	50 1601 1.366										
					25***	50 1601 1.603										
<b>ROCOAT® Niacinamide 33 1/3% Coated</b>	●	●			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.



## 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
<b>Calcium D-Pantothenate</b> Spray-dried	●	●	●	●	25	04 1267 8.366		●	●	●	●	●	●	●	●
<b>D-Panthenol</b> Liquid	●	●			20	04 1385 2.331	●			●	●				●
<b>D-Panthenol Ph</b> 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
<b>Pyridoxine Hydrochloride</b>	●	●			20	50 1581 8.340 (Origin: Xinghuo, China)									
					20	04 1160 4.340 (Origin: Germany)		●		●		●			●
<b>Pyridoxine Hydrochloride Ph</b> API with specific service package for pharma registered applications.	●	●	●	●	20	50 1626 5.340 (Origin: Xinghuo, China)									
					20	50 1646 0.340 (Origin: Germany)		●		●					●
<b>ROCOAT® Pyridoxine Hydrochloride 33 1/3%</b> 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.



## 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
<b>D-Biotin</b>	●	●	●	●	0.05	50 1165 5.240				●	●	●	●	●	
					1 pouch	50 1165 5.268									
					25	50 1165 5.372									
<b>D-Biotin Ph</b> 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									
<b>Bitrit-1® Type A</b>	●	●			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
<b>Folic Acid</b>	●	●			1	04 1782 3.268									
					25	04 1782 3.372		●		●	●	●	●	●	●
<b>Folic Acid Food Grade</b>	●	●			1	50 0435 7.268									
					25	50 0435 7.372		●		●	●			●	●
<b>Folic Acid Ph</b> API with specific service package for pharma registered applications.	●	●	●	●	1	50 1625 9.268		●	●						●
					25	50 1625 9.372									
<b>Metafolin**** (Calcium L-methylfolate)</b>	●	●			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
<b>Vitamin B12 Crystalline</b>	•	•			0.01	04 2915 5.234									
					0.1	04 2915 5.252		•	•	•	•		•		
					1	04 2915 5.264								•	
<b>Vitamin B12 Crystalline Ph</b>	•			•	0.1	50 1630 0.252			•					•	
<b>Vitamin B12 1% SD</b> Spray dried powder form.	•	•			5	50 1251 1.304			•	•				•	
					20	50 1251 1.341			•					•	
<b>Vitamin B12 0.1% WS</b>	•	•			20	50 1640 2.341			•	•				•	
<b>Vitamin B12 0.1% WS</b> Spray dried powder form.	•	•			5	04 2909 0.304			•	•	•			•	
													•	•	
<b>Vitamin B12 Crystalline Food Grade</b> 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
<b>Ascorbic Acid</b>	●	●			25	04 0805 0.366									
					25	04 0805 0.368		●		●		●		●	
					500	04 0805 0.429									
<b>Ascorbic Acid Ph</b> API with specific service package for pharma registered applications					25	50 1625 5.366		●	●						●
					25	50 1625 5.368									
<b>Ascorbic Acid Fine Powder</b>	●	●	●	●	25	04 2246 0.366		●	●**	●	●	●		●	●
					25	04 2246 0.368									
<b>Ascorbic Acid Ultra Fine Powder</b>	●	●	●	●	20	50 0976 6.341		●	●	●	●				●
<b>Ascorbic Acid Fine Granular</b>	●	●	●	●	25	04 0809 3.366		●	●	●	●				●
<b>Ascorbic Acid 90% Granulation</b>	●	●			25	50 0757 7.368		●		●					●
<b>Ascorbic Acid 95% Granulation</b>	●	●			25	50 0774 7.368		●	●	●					●
<b>Ascorbic Acid 97% Granulation</b>	●	●			25	50 1032 2.368		●		●					●
<b>Coated Ascorbic Acid, Type EC</b> 97.5% ascorbic acid content. Ethyl cellulose coating	●	●			25	04 2511 7.368		●	●	●					●
<b>Coated Ascorbic Acid, Type FC</b> 94% ascorbic acid content. Fat coating	●	●			25	04 4080 9.368		●		●			●		●
<b>Calcium Ascorbate</b>	●	●	●	●	25	04 1944 3.368		●	●	●	●				●
<b>Sodium Ascorbate Crystalline</b>	●	●			25	04 0817 4.606		●		●	●	●	●	●	●
<b>Sodium Ascorbate Ph</b> API with specific service package for pharma registered applications.			●	●	25	50 1625 6.606		●	●						●
<b>Sodium Ascorbate 99% TG</b>	●	●			20	50 0142 0.341		●		●					●
<b>Ascorbyl Palmitate</b>	●	●			5	04 1859 5.304									●
					25	04 1859 5.368		●		●	●	●			●
<b>RONOXAN® A</b> 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.*



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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
<b>DHASCO-B®</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										
<b>DHASCO-B® Powder</b> 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		●				●			●	
<b>life'sDHA™ S10-P200</b> Cold water dispersible. Free-flowing powder derived from microalgae containing 10% DHA (100 mg/g)	●	●			12.5	50 1372 0.148		●		●					●	
<b>life'sDHA™ S17-P100</b> Not cold water dispersible. Free-flowing powder derived from microalgae containing 17% DHA (170 mg/g)	●	●			12.5	50 1371 2.148		●		●					●	
<b>life'sDHA™ 100 mg Vegetarian Capsules</b> DHA-S oil in a 300 mg (10 oval) carrageenan vegetarian capsule providing 100 mg DHA					8,000 caps	50 1373 9.035	●								●	
<b>life'sDHA™ 200 mg Vegetarian Capsules</b> DHA-S oil in a 600 mg (14 oval) carrageenan vegetarian capsule providing 200 mg DHA					8,000 caps	50 1374 7.035	●								●	
<b>life'sDHA™ S35-O300</b> 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										
<b>life'sDHA™ S35-O300DS</b> 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										
<b>life'sDHA™ S40-O400</b> 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										
<b>life'sDHA™ S40-O400DS</b> 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										
<b>life'sDHA™ S40-O500</b> 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										
<b>life'sDHA™ SF55-O200DS</b> 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*<sup>™</sup> (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
<b>life's™ OMEGA 45</b> 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										
<b>life's™ OMEGA 60</b> 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										
<b>life's™ OMEGA 60-DS</b> 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									•	
<b>life's™ OMEGA 01030DS</b> Nutritional oil from microalgae providing min. 510 mg/g Total Omega-3			•		190	50 1650 5.420	•								•	
<b>life's™ OMEGA 300 mg Vegetarian Capsules</b> 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
<b>life's™ GLA '10' n-6 Oil</b> Refined Evening Primrose Oil. Minimum 9% γ-linolenic acid (GLA)		●			25	04 2239 8.372	●			●	●				●	●
<b>life's™ GLA '25' n-6 Oil</b> 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)

<b>ARASCO®</b> 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	●					●			●	●
<b>ARASCO® Powder</b> 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		●				●			●	●
<b>life's™ ARA '12' n-6 ARA Powder</b> 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)

<b>Formulaid®-B (2:1 ARA:DHA)</b> 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	●					●			●	●
<b>Formulaid®-B (1:1 ARA:DHA)</b> 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	DMP*	CEP			Liquid	Powder	Pharma Reg. OTC/Rx*	Dietary Supplements	Foods and Beverages	Early Life Nutrition	Medical Nutrition	Nutrition Improvement	Naturally Sourced	Vegetarian
<b>MEG-3® '15' n-3 Emulsion LV</b> Min. 15% total Omega-3. Min. 12.5% EPA + DPA + DHA. Min. 6.25% DHA and 4.5% EPA		●			10	50 0968 5.098	●				●				●	
<b>MEG-3® '30' n-3 Food Oil</b> 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	●				●				●	
<b>MEG-3® '30' n-3 INF Oil</b> Triglycerides, min. 30% total Omega-3. Min. 23% DHA		●			25 190	50 1528 9.372 50 1528 9.420	●				●				●	
<b>MEG-3® 1812 TG 3a Food Oil</b> 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	●			●	●				●	
<b>MEG-3® 1812 TG 8a Food Oil</b> Steam deodorized triglycerides, min. 160 mg EPA, 100 mg DHA. 280 mg Omega-3 per g		●			190	50 1516 2.420	●			●	●				●	
<b>MEG-3® 30% 8a Food Oil</b> 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	●			●	●				●	
<b>MEG-3® DHA Inf Food Oil</b> 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	●			●	●				●	
<b>MEG-3® 30% B Powder</b> 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		●		●	●				●	
<b>MEG-3® DHA rf Powder</b> Microencapsulated powder based on fish gelatin, 132 mg DHA and min. 184 mg total Omega-3 per g		●			10	50 1631 5.322		●		●	●	●			●	
<b>MEG-3® DHA B Powder</b> Microencapsulated powder based on bovine gelatin, 132 mg DHA and min. 184 mg total Omega-3 per g					10	50 1622 7.322		●		●	●				●	
<b>MEG-3® 26% H Powder</b> 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		●		●	●	●			●	
<b>MEG-3® '10' n-3 INF Powder</b> 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		●		●	●	●			●	
<b>MEG-3® '10' n-3 INF Powder S/SD</b> 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		●		●	●	●			●	
<b>MEG-3® '15' n-3 High DHA Powder S/SD</b> 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		●		●	●	●			●	
<b>MEG-3® '10' n-3 Food Powder S/SD</b> 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		●		●	●	●			●	

\*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.



# 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
<b>MEG-3® 1844EE</b> Ethyl esters, min. 180mg EPA, 440mg DHA. 660mg total Omega-3 per g		●			190	50 1517 1.420	●			●				●		
<b>MEG-3® 2718EE</b> Ethyl esters, min. 270mg EPA, 180mg DHA. 500mg total Omega-3 per g		●			190	50 1520 1.420	●			●				●		
<b>MEG-3® 2919EE</b> Ethyl esters, min. 290mg EPA, 190mg DHA. 530mg total Omega-3 per g		●			190	50 1520 5.420	●			●				●		
<b>MEG-3® 3025EE</b> Ethyl esters, min. 300mg EPA, 250mg DHA. 600mg total Omega-3 per g		●			190	50 1520 9.420	●			●				●		
<b>MEG-3® 3020EE</b> Ethyl esters, min. 300mg EPA, 200mg DHA. 600mg total Omega-3 per g		●			190	50 1521 1.420	●			●				●		
<b>MEG-3® 3223EE</b> Ethyl esters, min. 320mg EPA, 230mg DHA. 665mg total Omega-3 per g		●			190	50 1528 4.420	●			●				●		
<b>MEG-3® 3627EE</b> Ethyl esters, min. 360mg EPA, 270mg DHA. 680mg total Omega-3 per g		●			190	50 1524 1.420	●			●				●		
<b>MEG-3® 4618EE</b> Ethyl esters, min. 460mg EPA, 180mg DHA. 700mg total Omega-3 per g		●			190	50 1525 2.420	●			●				●		
<b>MEG-3® 5004EE</b> Ethyl esters, min. 500mg EPA, 40mg DHA. 590mg total Omega-3 per g		●			190	50 1525 8.420	●			●				●		
<b>MEG-3® Ultra High OMEGA EE</b> Ethyl esters, min 480mg EPA, 230mg DHA, 740mg total Omega-3 per g		●			190	50 1634 8.420	●			●				●		
<b>MEG-3® Ultra High DHA EE</b> Ethyl esters, min 640mg DHA, 700mg total Omega-3 per g		●			190	50 1636 5.420	●			●				●		
<b>MEG-3® Ultra High EPA EE</b> Ethyl esters, min 710mg EPA, 730mg total Omega-3 per g		●			190	50 1636 6.420	●			●				●		
<b>MEG-3® 1812rTG</b> Triglycerides, min. 180mg EPA, 120mg DHA. 350mg total Omega-3 per g		●			190	50 1516 7.420	●			●				●		
<b>MEG-3® 1048rTG</b> Triglycerides, min. 100mg EPA, 480 mg DHA, 650 mg total Omega-3 per g		●			190	50 1590 6.420	●			●				●		
<b>MEG-3® 2718rTG</b> Triglycerides, min. 270mg EPA, 180mg DHA. 500mg total Omega-3 per g		●			190	50 1520 7.420	●			●				●		
<b>MEG-3® 3223rTG</b> Triglycerides, min. 320 mg EPA, 230 mg DHA, 640 mg total Omega-3 per g		●			190	50 1643 1.420	●			●				●		
<b>MEG-3® 1812 TG Oil</b> Triglycerides, min. 160mg EPA, 100mg DHA. 300mg total Omega-3 per g		●			190	50 1516 5.420	●			●				●		
<b>MEG-3® 30% TG Oil</b> Triglycerides, min. 260mg EPA + DHA. 300mg total Omega-3 per g		●			190	50 1519 8.420	●			●				●		

\*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 | 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.



**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	
<b>All-Q® (Coenzyme Q10) 10% CWS/S</b> 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	
<b>Fabules® DE</b> 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
<b>METAFOLIN®</b>	•	•			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
<b>CaroCare® Nat. β-Carotene 1% CWS/M</b> Powder, cold water dispersible. Based on medium chain triglycerides	●	●			5 20	50 1212 0.304 50 1212 0.341		●			●				●	●	Yellow
<b>CaroCare® Nat. β-Carotene 10% CWS Star</b> Beadlet <sup>††</sup> , cold water dispersible. Starch-based	●	●			5 20	50 1093 4.341		●			●				●	●	Orange
<b>CaroCare® Nat. β-Carotene 10% CWS/S</b> Spray-granulated powder, cold water dispersible. Starch-based	●	●			10	50 1484 2.141		●			●				●	●	Yellow-Orange to Orange
<b>CaroCare® Nat. β-Carotene 20% CWS/S-TG</b> Spray-granulated powder, cold water dispersible. Starch-based	●	●			10	50 1484 4.141		●		●	●				●	●	Yellow-Orange to Orange
<b>CaroCare® Nat. β-Carotene 30% S</b> Fluid suspension	●	●			5	50 1480 8.302	●			●	●				●	●	Yellow
<b>CaroCare® Nat. β-Carotene 30% OS</b> 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
<b>β-Carotene Crystalline Ph</b> API with specific service package for pharma registered applications	●	●		●	0.25	50 1434 4.258		●	●							●	
<b>β-Carotene 1% CWS/M</b> Powder, cold water dispersible. Based on medium chain triglycerides	●	●			5 25	50 1628 0.304 50 1628 0.368		●			●					●	Yellow
<b>β-Carotene 3% CWS/M</b> Powder, cold water dispersible. Based on medium chain triglycerides	●	●			5	50 0363 6.304		●			●					●	Yellow
<b>β-Carotene 7% CWS</b> Powder, cold water dispersible	●	●			10	04 8228 5.231		●			●						Yellow-Orange
<b>β-Carotene 10% CWS</b> Beadlet <sup>††</sup> , cold water dispersible	●	●			1 5 25	04 3482 5.268 04 3482 5.304 04 3482 5.368		●			●						Yellow-Orange to Orange
<b>β-Carotene 10% CWS/S</b> Beadlet <sup>††</sup> , cold water dispersible. Starch-based	●	●			5 20	04 8999 9.304 (Origin: Switzerland) 04 8999 9.314 (Origin: Switzerland)		●			●					●	"Yellow-Orange to Orange"
<b>β-Carotene 10% CWS/S</b> 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
<b>BetaTab® 20% S</b> Beadlet <sup>††</sup> , tablet grade. Starch-based	●	●			5 25	50 0400 4.304 50 0400 4.368		●	●						●	
<b>BetaTab® 20% S Ph</b> API with specific service package for pharma registered applications. Beadlet <sup>††</sup> , cold water dispersible	●	●		●	25	50 1435 2.368		●	●						●	
<b>β-Carotene 15% LCS</b> Powder, cold water dispersible	●	●			5 20	50 1577 6.304 50 1577 6.341		●			●				●	Low color saturation
<b>β-Carotene 10% Emulsion Red</b> Liquid emulsion	●	●			6	50 1253 8.147	●				●				●	Red
<b>β-Carotene 10% EM Yellow</b> Liquid emulsion	●	●			5	50 0242 7.301	●				●				●	Yellow
<b>β-Carotene 5% EM K</b> Liquid emulsion	●	●			5 25	50 1125 6.311 50 1125 6.356	●				●				●	Yellow
<b>β-Carotene 2.5% Emulsion CC</b> Liquid emulsion	●	●			6	50 1477 8.147	●				●				●	Yellow
<b>β-Carotene 30% FS</b> Fluid suspension	●	●			1 5 5	04 2723 3.266 04 2723 3.311 04 2723 3.294	●				●	●			●	Yellow
<b>β-Carotene 30% FS Ph</b> API with specific service package for pharma registered applications. Fluid suspension	●	●		●	5	50 1438 7.294	●		●						●	
<b>β-Carotene 30% FS/SF</b> Fluid suspension in sunflower oil	●	●			5	50 0023 8.311	●				●	●			●	Yellow
<b>β-Carotene 22% HSS</b> Fluid suspension, heat stable	●	●			20 <sup>††</sup>	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
<b>Apocarotenal 1% CWS/M</b> Powder, cold water dispersible. Based on medium chain triglycerides	●	●			5 25	50 0631 7.304 50 0631 7.368		●		●					●	Orange to Orange-Red	
<b>Apocarotenal 10% WS/N</b> Beadlet††	●	●			1	04 8737 6.268		●		●						Orange to Orange-Red	
<b>Apocarotenal 20% S</b> Fluid suspension	●	●			1 5	04 8093 2.266 04 8093 2.311	●			●					●	Yellow-Orange to Orange	
<b>Carotenal Solution #2</b> 2% 8'-apo-β-Carotenal	●	●			20 20'	04 8227 7.313 (Origin: France) 04 8227 7.199 (Origin: USA)	●			●					●	Orange	
<b>Carotenal Solution #73</b> 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	Coloration
<b>AstaSana™ 5% CWS/S-TG</b> 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
<b>Canthaxanthin 10% CWS/S</b> 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
<b>FloraGLO® Lutein 1% SD/S</b> Powder, cold water dispersible. Starch-based	●	●			20	50 1514 9.341		●			●	●	●	●	●	Very low color saturation
<b>FloraGLO® Lutein 5% CWS/S-TG</b> 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)										
<b>FloraGLO® Lutein 10% CWS/S-TG</b> 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)										
<b>FloraGLO® Lutein 10% SG-VG</b> Spray-granulated powder, tablet grade and cold water dispersible. Starch-based	●	●			5	50 1595 3.304		●	●			●	●	●	Yellow to Yellow-Orange	
<b>FloraGLO® Lutein 20% SAF</b> 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)										
<b>FloraGLO® OPTISHARP® 5:1 24% FS</b> 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
<b>redivivo® (Lycopene) 10% CWS/S-TG</b> Beadlet, tablet grade and cold water dispersible. Starch-based	●	●			5	50 0379 2.304		●		●	●					●	
<b>redivivo® (Lycopene) 10% FS</b> Fluid suspension	●	●			5	50 0020 3.294	●			●	●					●	
<b>redivivo® 10% CWS/S-TG</b> 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
<b>OPTISHARP® Natural (Zeaxanthin) 5% CWS/S-TG</b> Spray granulated powder, cold water dispersible. Starch-based	●	●			10	50 1579 9.141		●		●	●			●	●	●	
<b>OPTISHARP® Natural (Zeaxanthin) 14% Safflower Oil</b> 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.



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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
<b>Tolerase® G</b> Prolyl oligopeptidase. Micro granulated powder, 580,000 PPI/g	●	●			5	50 1488 3.304		●		●							●
<b>Tolerase® L</b> 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.



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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
<b>Copper Sulfate SD 1.5% Cu</b> 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
<b>Ferrous Sulfate SD 3% Fe</b> 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
<b>Potassium Iodide SD 0.25% I</b> 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
<b>Manganese Sulfate SD 0.1% Mn</b> 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
<b>Zinc Sulfate SD 3% Zn</b> 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.



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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

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### **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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