



# Ingredients for Human Nutrition & Health

Product Catalogue 2014



HEALTH • NUTRITION • MATERIALS



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# DSM – Bright Science. Brighter Living.™

## Our company

DSM is a global science-based company active in health, nutrition and materials. By connecting its unique competences in Life Sciences and Materials Sciences DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders. DSM delivers innovative solutions that nourish, protect and improve performance in global markets such as food and dietary supplements, personal care, feed, pharmaceuticals, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials. DSM's 23,500 employees deliver annual net sales of around €9.5 billion. The company is listed on NYSE Euronext. More information can be found at [www.dsm.com](http://www.dsm.com)

## Who we are

Who we are as a company is the result of strategic choices that we have made. These in turn are based on our mission and our core value; they define what we believe in and how we go about our business.

## Our mission

Our purpose is to create brighter lives for people today and generations to come. We connect our unique competences in Life Sciences and Materials Sciences to create solutions that nourish, protect and improve performance.

## Our core value

Our mission is supported by our core value: Sustainability. Everything we do should contribute to a more sustainable world. To us, achieving sustainability means simultaneously pursuing economic performance, environmental quality and social responsibility. In other words, we strive to create value on the three dimensions of People, Planet and Profit simultaneously.

## Our brand promise

Bright Science. Brighter Living.™ This sums up who we are, what we stand for and what we aim to achieve.

These four words are the shorthand for our mission, our beliefs and our behaviors – a promise that we make to the world in which we operate.

Bright Science refers to the unique way in which we combine Life Sciences and Materials Sciences disciplines, technologies and talents. We partner with customers and other stakeholders – then we share ideas, insights and inspiration to create innovative and sustainable solutions that address the key challenges facing society today.

Brighter Living refers to our commitment to creating products and solutions that make a positive difference to people's lives. We are constantly seeking new ways to improve quality of life, and we seek to make a positive contribution to the lives of people today and generations to come.

## DSM Nutritional Products

**DSM Nutritional Products** is organized around three market-facing entities: **Animal Nutrition & Health**, **Human Nutrition & Health** and **Personal Care**. Human Nutrition & Health largely addresses the nutritional ingredients part of the food market. Animal Nutrition & Health addresses the nutritional additives segment of the feed market. Personal Care is focusing on the actives and ingredients in the sun care, skin care and hair care industries.

DSM is the only producer who can supply the complete range of vitamins, carotenoids and nutritional lipids in the most suitable forms for all possible human and animal uses. DSM is working from its strong basis as a global market leader in key value-added ingredients offered through an international infrastructure and reach unequaled by any competitor.

DSM is uniquely positioned in all three main steps of the value chain: the production of pure active ingredients, their incorporation into sophisticated forms, and the provision of tailored premixes. Being the only fully integrated player allows DSM to differentiate itself all the way through the chain.

Managing the interdependencies between active ingredients, forms and premixes, which have important implications for innovation, logistics, and value delivery, is a core competence of DSM.

Learn more about our new products in the next sections of this catalogue 2014:

- **AstaSana™ (Astaxanthin)**: this active is now available, in two product forms: AstaSana™ 5% CWS/S-TG and AstaSana™ 10% FS
- **FloraGLO® Lutein 1% SD/S**: a lutein product form for infant formula, instant products and water-based foods.
- **life'sOMEGA™ 60 (O55 – O100)**: vegetarian omega-3 long chain PUFAs from micro-algae, with minimum 60% total omega-3.

## Coming soon in 2014

- **β-Carotene 2.5%EM/CC-S**: a β-Carotene emulsion which enables you to color and fortify clear beverages, and serves as an alternative to AZO dyes.
- **Apocarotenal 2.5%EM/CC-S**: an apocarotenal emulsion which enables you to color and fortify clear beverages, and serves as an alternative to AZO dyes.
- **Tolerase™ G**: a dietary enzyme, the prolyl endopeptidase, which addresses the needs of consumers who want to reduce the effect of gluten in their diets.

# DSM Nutritional Products Human Nutrition & Health

## A pioneer in innovation

At DSM Nutritional Products, innovation is part of our DNA. Dating back to 1935, with the first chemical synthesis of Vitamin C to present times of being leaders in delivering multiple forms of DHA to improve the nutrition and development of infants and children, we continue to invest heavily in innovation.

More and more we embrace and practice open *innovation*, which means not only scouting and collaborating with external scientists, universities and start-up companies, but also our most important partners, our Customers. Open innovation allows us to see a broader landscape of new solutions to meet the needs of our customers as well as increasing our speed of delivering those solutions to our customers.

DSM Nutritional Products' Research & Development resources are concentrated in the regions of Switzerland, the Netherlands, China and the United States, which include process R&D for actives, product form R&D to optimize bioavailability, stability and function, as well as world class Analytics to serve both internal needs as well as our customers.

## Customer Focus

*Customer orientation* is one of our fundamental cultural values at DSM. Our customers are at the center of all our efforts. Everything that we do—from product development to safety and regulatory compliance and documentation to consumer advocacy – we do to improve our customers' business and their relationship to their consumer.

We strive to provide our customers with not only nutritional and functional answers to their needs, but also the peace of mind and trust that comes with having a dedicated and reliable *partner* who understands their business, their brands and their consumers.

## Global Operations

DSM Nutritional Products has a truly global footprint of assets, both factory and people, to deliver solutions for our customers. With over a dozen vitamin, carotenoid and nutraceutical operations and 14 dedicated Premix facilities, we can provide our customers with breadth, speed and customization. We are never far away to help them with their business needs.

## Quality Management and Regulatory Affairs

DSM Nutritional Products constantly strives to maintain and advance its own high quality standards. Our aim is not only to be the benchmark for the industry but also to give our customers the peace of mind that only comes with quality.

We apply industry-appropriate Good Manufacturing Practice to our production operations worldwide. Every part of the process – from sourcing through production, quality assurance and storage to delivery – is managed so as to ensure the highest levels of process safety and product quality. All processes are designed to anticipate customer requirements and market trends. Beside product specifications, DSM Nutritional Products provides clear statements concerning, for example, GMO ingredients, BSE/TSE, residual solvents limits, and the absence of allergenic potentials. In many cases, Kosher and Halal certificates issued by highly reputed international organizations are available.



These efforts are complemented by strict change control procedures which are certified via the GFSI recognized standard FS22000.

Our dietary and food ingredients are manufactured following the HACCP concepts. DSM Nutritional Products produces vitamins for use as active pharmaceutical ingredients, operating in compliance with the worldwide accepted GMP standard ICHQ7a. CEP (Certificate of Suitability to the European Pharmacopoeia) are available for our full-range of vitamins.



[www.dsm.com/human-nutrition](http://www.dsm.com/human-nutrition)

Visit our website for full details on our products, health benefit solutions, services and more.



## A seal of excellence for our products and services

As the world's leading manufacturer of ingredients for health and nutrition, quality is at the heart of everything we do. This supports our ambition to fully understand our customers' needs, and runs from product conception through manufacturing, all the way to after-sales support.

For us at DSM, quality is a way of life. This is the core of our Quality for Life™ initiative.

It means you are getting the very best ingredients, you know where they come from and you know you can depend on their safe source. It symbolizes our commitment to our environment, our business partners, our people and the regulatory framework that governs our operations.

*With our Quality for Life™ seal, we aim to ensure quality for you and for your customers.*

The following trademark logos are part of the Quality for Life™ initiative and can be licensed to use on your end products:



Quali®-A

Quali®-D

Quali®-Biotin

Quali®-B

Quali®-E

Quali®-Carotene

Quali®-C

Quali®-K

Quali®-Blends



[www.qualityforlife.com](http://www.qualityforlife.com)

If you require information on Quality for Life™ or the Quali® trademarks, please contact your DSM representative or e-mail: [quality.forlife@dsm.com](mailto:quality.forlife@dsm.com)

# Health Benefit Solutions by DSM

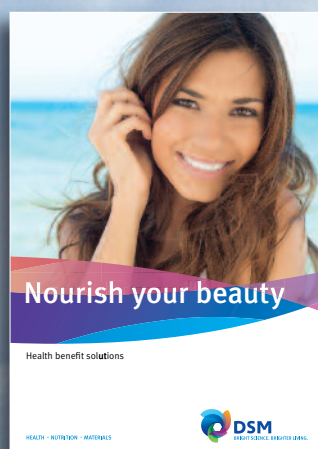
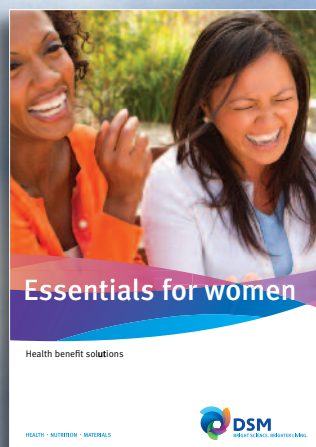
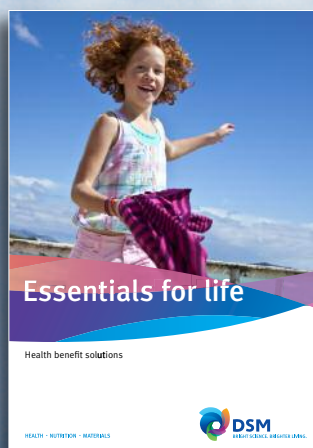
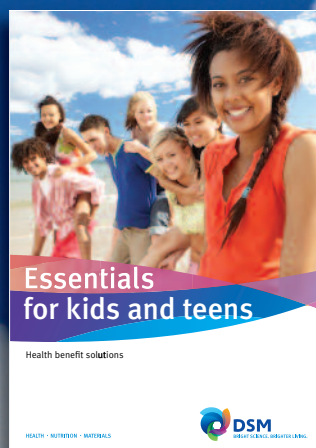
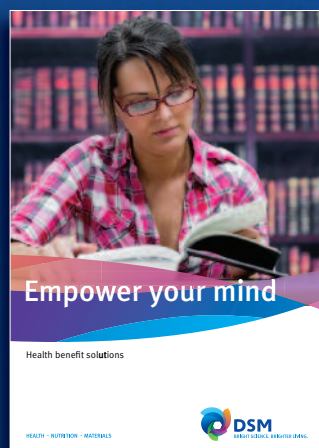
Wherever we are, we are all consumers and we all care about healthy living.

DSM is uniquely positioned to help you make your products attractive to health-conscious consumers. We have the world's broadest portfolio of innovative, high-quality health nutrients. This is the solid basis for the health benefit solutions. But that's just a start...

- DSM can support you with thorough scientific expertise and technical know-how.
- Our application labs and Fortitech® Premixes operations are active on all continents.
- With a presence in over 50 countries, our sales force is always close to hand.

Last but not least, our total quality assurance and dedication to a sustainable and responsible way of doing business are core to our Quality for Life™ promise. We are focusing our value proposition on key health benefits.

- **Healthy aging**  
We can help you to add more life to your years
- **Empower your mind**  
Stay ahead! Boost your mind with our ingredients
- **Energize your mind**  
Energize your brain with functional ingredients developed to promote mental performance and focus
- **Essentials for kids and teens**  
Our tailored nutrients can help children during all phases of childhood to grow up to their full potential
- **Essentials for life**  
Our complete mix of nutrients is the solid foundation for a healthy life
- **Essentials for men**  
Customized solutions for men's specific needs
- **Essentials for women**  
Our tailored ingredients can help fulfil women's specific needs
- **Essentials for vegetarians**  
Customized ingredient solutions to help support the specific nutritional needs of vegetarians
- **Guard your heart**  
Rely on us to help protect your heart and take pressure out
- **Nourish your beauty**  
Our ingredients help to protect or repair your skin, hair or nails from within
- **Optimize your immunity**  
Our nutrients help you to protect your health
- **Power your performance**  
Charging your body to reach beyond your limits
- **Relax your mind**  
Relax and unwind with the help of functional ingredients designed to help clear your thoughts and calm your mind
- **Shape your body**  
Our natural ingredients help you to shape up and resist temptation
- **Strengthen your bones**  
Bones live! Build them throughout life with our portfolio of bone actives
- **Upgrade your vision**  
Protect and improve your eyesight with the help of our carotenoids and vitamins





## Fortify the future

**Introducing Fortitech® Premixes – DSM's premier custom nutrient premix service.**

### Seize the opportunities

Nutrition-savvy consumers everywhere are looking for foods, beverages and supplements that serve a functional need, from preventing and managing health conditions to delivering essential nutrition. With Fortitech® Premixes, you can provide custom solutions to fit every market.

### Partner with Fortitech® Premixes

Fortitech® Premixes provide a precisely customized blend of functional ingredients – sourced from over 1,400 vitamins, minerals, amino acids, nucleotides, and botanicals – in one single, efficient, homogenous premix.

From market-ready powdered solutions to completely customized combinations in dry or liquid form. Any nutrient. Any application. Anywhere in the world.

### Get a development, production and a marketing and sales advantage...

Fortitech® Premixes' custom solutions will help you:

- Ensure safety, quality and security
- Reduce equipment, labor and testing costs
- Accelerate product development
- Lower purchasing/inventory costs

### ...and gain a competitive edge

- We have unmatched customized fortification expertise
- We help you differentiate your products and seize new market opportunities
- We provide a global platform for production and distribution – delivering the premixes you need, on time, everywhere



## Take the next step

Request a free sample to get your next top-selling product started and read through our free tech papers at [fortitechpremixes.com](http://fortitechpremixes.com)


Visit [www.fortitechpremixes.com/contact](http://www.fortitechpremixes.com/contact) to locate and call a Fortitech® Premixes representative nearest you.



Follow Fortitech® Premixes



# Carotenoids for fortification and coloration

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>β-Carotene – Natural Source (Pro-Vitamin A)</b> 				
<b>CaroCare® Nat. β-Carotene 1% CWS/M</b> Powder, cold water dispersible based on medium chain triglycerides	Kosher, Halal	5 20	50 12120.304 50 12120 341	For fortification and coloration of water-based foods, instant products, beverages, puddings, confectionery and milk products. Color range: yellow.
<b>CaroCare® Nat. β-Carotene 10 % CWS Star Beadlet<sup>††</sup></b> , cold water dispersible. Starch-based	Kosher, Halal	5 20	50 10934.304 50 10934.341	For fortification and coloration of beverages, soups, sauces, cereals and confectionery. Color range: yellow-orange to orange.
<b>CaroCare® Nat. β-Carotene 30% S</b> Fluid suspension. Starch-based	Kosher, Halal	5	50 14808.302	For soft gelatin capsules. For fortification and coloration of fat-based foods. Color range: yellow.
<b>CaroCare® Nat. β-Carotene 10% CWS/S</b> Spray-granulated powder cold water dispersible. Starch-based	Kosher, Halal	10	50 14842.141	For use in directly compressed tablets, hard-shell capsules, powder for beverage mixes and liquid preparations. Color-range: yellow-orange to orange.
<b>CaroCare® Nat. β-Carotene 20% CWS/S-TG</b> Spray-granulated powder, cold water dispersible. Starch-based	Kosher, Halal	10	50 14844.141	For use in directly compressed tablets, hard-shell capsules, powder for beverage mixes and liquid preparations. Color-range: yellow-orange to orange.


<sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling

## β-Carotene (Pro-Vitamin A)

 Quali-Carotene

<b>β-Carotene 1% CWS/M</b> Powder, cold water dispersible. Based on medium chain triglycerides	Kosher, Halal	5 25	50 03741.304 50 03741.368	For fortification and coloration of water-based foods, instant products, beverages, puddings, confectionery and milk products. Color range: yellow.
<b>β-Carotene 3% CWS/M</b> Powder, cold water dispersible. Based on medium chain triglycerides	Kosher, Halal	5	50 03636.304	For fortification and coloration of water-based foods, instant products, beverages, puddings, confectionery and milk products. Color range: yellow.

# Carotenoids

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>β-Carotene (Pro-Vitamin A)</b> <i>continued</i> 				
<b>β-Carotene 7% CWS</b> Powder, cold water dispersible	Kosher, Halal	10	04 82285.231	For fortification and coloration of beverages, puddings, confectionery and milk products. Color range: clear yellow.
<b>β-Carotene 10% CWS</b> Beadlet <sup>††</sup> , cold water dispersible	Kosher, Halal	1 5 25	04 34825.268 04 34825.304 04 34825.368	For fortification and coloration of beverages, soups, sauces, cereals and confectionery. Color range: yellow-orange to orange.
<b>β-Carotene 10% CWS/S</b> Beadlet <sup>††</sup> , cold water dispersible. Starch-based	Kosher, Halal	5 20	04 89999.304 04 89999.341	For fortification and coloration of beverages, soups, sauces, cereals and confectionery. Color range: yellow-orange to orange.
<b>β-Carotene 10% B</b> Beadlet <sup>††</sup> , Cross-linked	Kosher, Halal	5 25	04 34833.304 04 34833.368	For fortification of dry food products as a non-coloring nutrient.
<b>BetaTab® 10% E</b> Beadlet <sup>††</sup> , tablet grade	Kosher, Halal	5 25	04 34140.304 04 34140.368	For effervescent tablets.
<b>BetaTab® 20% S</b> Beadlet <sup>††</sup> , tablet grade. Starch-based	Kosher, Halal	5 25	50 04004.304 50 04004.368	For direct compression tablets and hard gelatin capsules.
<b>BetaTab® 20% S Ph</b> Beadlet <sup>††</sup> , tablet grade. Starch-based	Kosher, Halal	25	50 14352.368	For pharmaceutical preparations.
<b>β-Carotene 15% LCS</b> Powder, cold-water dispersible	Kosher, Halal	5 20	50 08409.304 50 08409.341	For fortification of instant drinks and meal replacement beverages. Very low color saturation.
<b>β-Carotene 10% Emulsion Red</b> Liquid emulsion	Kosher, Halal	6	50 12538.147	For fortification and coloration of juice and non-juice beverages, ice cream, yogurt and salad dressings. Color range: pink to strawberry red.
<b>β-Carotene 10% EM Yellow</b> Liquid emulsion	Kosher, Halal	5	50 02427.301	For fortification and coloration of juice and non-juice beverages, ice cream, yogurt and salad dressings. Color range: yellow.
<b>β-Carotene 5% EM K</b> Liquid emulsion	Kosher, Halal	5 25	50 11256.311 50 11256.356	For fortification and coloration of juice and non-juice beverages, ice cream, yogurt and salad dressings. Color range: yellow.
<b>β-Carotene 30% FS</b> Fluid suspension	Kosher, Halal	1 5 5 1 <sup>†</sup> 20 <sup>†</sup>	04 27233.266 04 27233.311 04 27233.294 (Origin: France) 50 08735.175 50 08735.199 (Origin: USA)	For soft gelatin capsules. For fortification and coloration of fat-based foods. Color range: yellow.
<b>β-Carotene 30% FS Ph</b> Fluid suspension	Kosher, Halal	5	50 14387.294	For pharmaceutical preparations.
<b>β-Carotene 30% FS/SF</b> Fluid suspension in Sunflower oil	Kosher, Halal	5	50 00238.311	For soft gelatin capsules. For fortification and coloration of fat-based foods. Color range: yellow.
<b>β-Carotene 22% HSS</b> Fluid suspension, heat stable	Kosher, Halal	1 20	04 66042.913 04 66042.313	For soft gelatin capsules. For coloration of pop-corn, popping and frying oils. Color range: yellow.

<sup>†</sup> Only for North America. <sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling.

## Apocarotenal (8'-apo-β-Carotenal)

<b>Apocarotenal 1% CWS/M</b> Powder, cold water dispersible. Based on medium chain triglycerides	Kosher, Halal	5 25	50 06317.304 50 06317.368	For fortification and coloration of water-based foods, instant products, beverages, puddings, confectionery and milk products. Color range: orange to reddish-orange.
<b>Apocarotenal 10% WS/N</b> Beadlet <sup>††</sup>	Kosher, Halal	1	04 87376.268	For fortification and coloration of beverages, soups, sauces, cereals and confectionery. Color range: orange-red to red.
<b>Apocarotenal 20% S</b> Fluid suspension	Kosher, Halal	1 5	04 80932.266 04 80932.311	For coloration of oil-based foods such as salad dressings, sauces, edible oils, margarine and processed cheese. Color range: yellow-orange to orange.
<b>Carotenal Solution #2</b> 2% solution	Kosher	20 20 <sup>†</sup>	04 82277.313 (Origin: France) 04 82277.199 (Origin: USA)	For coloration of oil-based foods such as salad dressings, pastry and processed cheese. Color range: yellow-orange to orange.
<b>Carotenal Solution #73</b> 1.4% 8'-apo-β-Carotenal and 0.6% β-Carotene solution (70:30 ratio)	Kosher	20 20 <sup>†</sup>	04 80541.313 (Origin: France) 04 80541.199 (Origin: USA)	For coloration of oil-based foods such as salad dressings, pastry and processed cheese. Color range: yellow-orange to orange.

<sup>†</sup> Only for North America. <sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling.

# Carotenoids

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>Astaxanthin</b>				
<b>AstaSana™ (Astaxanthin) 5% CWS/S-TG</b> Beadlet <sup>††</sup> , tablet grade and cold water dispersible. Starch-based	Kosher, Halal	5 <sup>†</sup>	50 15299.304	For direct compression tablets and hard-shell capsules.
<b>AstaSana™ (Astaxanthin) 10% FS</b> Fluid Suspension	Kosher, Halal	5 <sup>†</sup>	50 15299.304	For soft gelatin capsules.

<sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling. <sup>†</sup> Only for North America.

## Canthaxanthin

<b>Canthaxanthin 10% CWS/S</b> Beadlet <sup>††</sup> , cold water dispersible. Starch-based	Kosher, Halal	1 5 25	50 05256.268 50 05256.304 50 05256.368	For coloration of beverages, tomato soups, sauces, confectionary and meat substitution products. Color range: orange-red to red.
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<sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling.



## Lutein

<b>FloraGLO® Lutein 1 % SD/S</b> Powder, cold water dispersible. Starch-based.	Kosher, Halal	5	50 1514 9.341	For fortification of infant formula products and general fortification of water-based foods and instant products.
<b>FloraGLO® Lutein 5% CWS/S-TG</b> Beadlet <sup>††</sup> , tablet grade and cold water dispersible. Starch-based.	Kosher, Halal	5 25 5 <sup>†</sup> 25 <sup>†</sup>	50 12066.304 50 12066.368 (Origin: Switzerland) 50 12066.605 50 12066.606 (Origin: USA)	For direct compression tablets and hard-shell capsules. For fortification of beverages, bars and other selected foods.
<b>FloraGLO® Lutein 10% CWS/S-TG</b> Beadlet <sup>††</sup> , tablet grade and cold water dispersible. Starch-based.	Kosher, Halal	5 20 5 <sup>†</sup> 20 <sup>†</sup>	50 11868.304 50 11868.368 (Origin: Switzerland) 50 11868.605 50 11868.606 (Origin: USA)	For direct compression tablets and hard-shell capsules. For fortification of beverages, bars and other selected foods.
<b>FloraGLO® Lutein 20% SAF</b> Fluid suspension in Safflower Oil.	Kosher, Halal	1 5 20 1 5 <sup>†</sup> 20 <sup>†</sup>	50 11876.261 50 11876.294 50 11876.331 (Origin: France) 50 11876.263 50 11876.694 50 11876.335 (Origin: USA)	For soft gelatin capsules. For fortification of selected fat-based foods.

FloraGLO® is a trademark of Kemin Industries, Inc. <sup>†</sup> Only for North America.

<sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling.

## Lycopene



<b>redivivo® (Lycopene) 10% CWS/S-TG</b> Beadlet <sup>††</sup> , tablet grade and cold water dispersible. Starch-based	Kosher, Halal	5 25	50 03792.304 50 03792.368	For direct compression tablets and hard-shell capsules. For fortification of beverages, bars and other selected foods.
<b>redivivo® (Lycopene) 10% FS</b> Fluid suspension	Kosher, Halal	5 20	50 00203.294 50 00203.336	For soft gelatin capsules. For fortification of selected fat-based foods.

<sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling.

## Zeaxanthin



<b>OPTISHARP® (Zeaxanthin) 5% CWS/S-TG</b> Beadlet <sup>††</sup> , tablet grade and cold water dispersible. Starch-based	Kosher, Halal	5 25	50 03563.304 50 03563.368	For direct compression tablets and hard-shell capsules. For fortification of beverages, bars and other selected foods.
<b>OPTISHARP® (Zeaxanthin) 20% FS</b> Fluid suspension	Kosher, Halal	1 5 20	50 02001.270 50 02001.294 50 02001.336	For soft gelatin capsules. For fortification of selected fat-based foods.

<sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling.



# Fat-soluble vitamins

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>Vitamin A – liquid</b> 				
<b>Vitamin A Acetate 1.5 MIU/g</b> Stabilized with tocopherol. 450 mg Retinol Equivalent/g	Kosher, Halal	5	04 18846.294	For dietary supplement and food preparations.
<b>Vitamin A Palmitate 1.0 MIU/g</b> Stabilized with tocopherol. Oily solution (peanut oil).	Kosher, Halal	5	04 31400.294	For dietary supplement and food preparations.
<b>Vitamin A Palmitate/M 1.0 MIU/g</b> Stabilized with tocopherol. Oily solution (medium chain triglycerides). Allergen-free. 300 mg Retinol Equivalent/g	Kosher, Halal	5	50 08530.294	For dietary supplement and food preparations.
<b>Vitamin A Palmitate 1.0 MIU/g</b> Stabilized with BHA/BHT. Oily solution (peanut oil). 300 mg Retinol Equivalent/g	Kosher, Halal	5	04 20603.294	For dietary supplement and food preparations.
<b>Vitamin A Palmitate 1.7 MIU/g</b> Stabilized with BHA/BHT. 510 mg Retinol Equivalent/g	Kosher, Halal	5 20	04 24013.294 04 24013.336	For dietary supplement and food preparations.
<b>Vitamin A Palmitate 1.7 MIU/g</b> Stabilized with tocopherol. 510 mg Retinol Equivalent/g	Kosher, Halal	5 20 190	04 18579.294 04 18579.336 04 18579.422	For soft gelatin capsules. For fortification of fat-based foods, milk, margarine, dairy products and dairy substitutes.
<b>Vitamin A Palmitate 1.7 MIU/g</b> Without stabilizers. 510 mg Retinol Equivalent/g	Kosher, Halal	5 20 190	04 24005.294 04 24005.336 04 24005.420	For soft gelatin capsules. For fortification of fat-based foods, milk margarine, dairy products and dairy substitutes.
<b>Vitamin A Palmitate 1.0 MIU/g and Vitamin D3 100,000 IU/g</b> Stabilized with tocopherol. Oily solution (corn oil). 300 mg Retinol Equivalent/g and 2.5 mg cholecalciferol/g	Kosher, Halal	5	50 11558.294	For soft gelatin capsules. For fortification of fat-based foods, milk, margarine, dairy products and dairy substitutes.

# Fat-soluble vitamins

## PRODUCT AND DESCRIPTION

## CERTIFICATION

## PACK SIZE (KG)

## PRODUCT CODE

## MAIN APPLICATION



### Vitamin A – liquid *continued*

<b>Vitamin A Water-miscible Type 100</b> Stabilized with BHA/BHT. 30 mg Retinol Equivalent/g	Halal	6 L	04 21316.126	For liquid oral dietary supplement preparations.
<b>Vitamin A + D3 Water-miscible Type 100/20</b> Stabilized with BHA/BHT. 30 mg Retinol Equivalent/g and 0.5 mg cholecalciferol/g	Halal	6 L	50 11566.126	For liquid oral dietary supplement preparations.

### Vitamin A – dry



<b>Dry Vitamin A Acetate 500 B</b> Stabilized with BHT. Beadlet, tablet grade. Based on bovine gelatin. 500,000 IU Vitamin A/g. 150 mg Retinol Equivalents/g	Kosher	5 25	50 12279.609 50 12279.656	For direct compression tablets and hard-shell capsules. For general food fortification.
<b>Dry Vitamin A Acetate 325 CWS/A</b> Stabilized with tocopherol. Beadlet, cold water dispersible. Based on gum acacia. 325,000 IU Vitamin A/g. 97.5 mg Retinol Equivalents/g	Kosher, Halal	5 20 5 25	5010330.304 5010330.341 (Origin: Switzerland) 5013526.304 5013526.341 (Origin: United States)	For general food preparation including infant nutrition. Animal ingredient free.
<b>Dry Vitamin A Palmitate, Type 250 CWS</b> Stabilized with BHA, BHT. Beadlet, cold water dispersible. 250,000 IU Vitamin A/g. 75 mg Retinol Equivalents/g		25	04 29937.368	For dry dietary supplement and food preparations which are reconstituted with liquids, especially for effervescent tablets. For fortification of sugar.
<b>Dry Vitamin A Palmitate, Type 250 CWS/F</b> Stabilized with tocopherol. Beadlet, cold water dispersible. Based on fish gelatin. 250,000 IU Vitamin A/g. 75 mg Retinol Equivalents/g	Kosher, Halal	25	04 21871.368	For effervescent and coated tablet and hard-shell capsules. For fortification of dry food products, including flour, dry milk and beverage powders and water-based foods.
<b>Dry Vitamin A Palmitate 250 S/N</b> Stabilized with BHT. Spray dried, Starch-based. 250,000 IU Vitamin A/g. 75 mg Retinol Equivalents/g	Kosher, Halal	20	50 12554.341	For fortification of flour, beverages, sugar and water-based food products.
<b>Dry Vitamin A Palmitate 250 S/N-B</b> Stabilized with BHT and sodium ascorbate. Beadlet, cold water dispersible. Starch-based. 250,000 IU Vitamin A/g. 75 mg Retinol Equivalents/g	Kosher, Halal	5 25	50 03814.304 50 03814.606	For dry dietary supplement and food preparations, especially for fortification of sugar.
<b>Dry Vitamin A Palmitate 50</b> Stabilized with BHT and sodium ascorbate. Starch-based. 50,000 IU Vitamin A/g. 1.5 mg Retinol Equivalents/g	Kosher, Halal	25	50 10446.368	For optimal fortification of sugar. Easy to handle and providing superior content uniformity in the final sugar.

### Vitamin D3 – liquid (Cholecalciferol)



<b>Vitamin D3 1.0 MIU/g</b> Stabilized with tocopherol. Oily solution (medium chain triglycerides). 25 mg cholecalciferol/g	Kosher, Halal	5	5011574.294	For soft gelatin capsules. For fortification of fat-based foods, edible oils, fats, milk, margarine and dairy products.
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### Vitamin D3 – dry (Cholecalciferol)



<b>Vitamin D3 Crystalline</b> 40,000,000 IU Vitamin D3/g. 1,000,000 µg cholecalciferol/g	Kosher, Halal	250 g	50 09278.258	For dietary supplements, food preparations and pharmaceutical applications.
<b>Dry Vitamin D3, Type 100 CWS</b> Stabilized with tocopherol. Beadlet, cold water dispersible. 100,000 IU Vitamin D3/g 2.5 mg cholecalciferol/g	Kosher	5 25	50 12015.304 50 12015.368	For direct compression tablets and hard-shell capsules. For fortification of dry food products, including flour, dry milk and beverage powders. For general fortification of water-based foods.
<b>Dry Vitamin D3 100 CWS/AM</b> Stabilized with tocopherol. Based on gum acacia. 100,000 IU Vitamin D3/g. 2.5 mg cholecalciferol/g	Kosher, Halal	25	50 11477.368	For hard-shell capsules. For fortification of dry food products, including flour, dry milk and beverage powders. For general fortification of water-based foods.
<b>Dry Vitamin D3 100 SD/S</b> Stabilized with tocopherol. Spray dried, cold water dispersible. Starch-based/Allergen free. 100,000 IU Vitamin D3/g 2.5 mg cholecalciferol/g	Kosher, Halal	5 20	50 10950.304 50 10950.341	For direct compression tablets and hard-shell capsules. For fortification of dry food products, including flour, dry milk and beverage powders. For general fortification of water-based foods.

# Fat-soluble vitamins

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>Vitamin E – liquid (dl-<math>\alpha</math>-Tocopherol, dl-<math>\alpha</math>-Tocopheryl Acetate)</b>				
<b>dl-<math>\alpha</math>-Tocopherol</b> 1100 IU Vitamin E/g 738 mg $\alpha$ -Tocopherol Equivalent/g	Kosher, Halal	5 20 50 <sup>†</sup>	04 10276.294 04 10276.336 04 10276.396	For soft gelatin capsules. As an antioxidant stabilizing oils and fat-based foods.
<b>dl-<math>\alpha</math>-Tocopheryl Acetate</b> 1000 IU Vitamin E/g 671 mg $\alpha$ -Tocopherol Equivalent/g	Kosher, Halal	5 20 190 900	04 20085.301 04 20085.331 04 20085.422 04 20085.476	For soft gelatin capsules. For fortification of oils and fat-based foods.

<sup>†</sup> Only for North America.

<b>Vitamin E – dry (dl-<math>\alpha</math>-Tocopheryl Acetate)</b>				
<b>Dry Vitamin E 15% CC</b> Spray dried. Starch-based. Crystal clear. 150 IU Vitamin E/g 101 mg $\alpha$ -Tocopherol Equivalent/g	Kosher, Halal	15	50 01285.281	For fortification of foods and beverages requiring optical clarity, non-ringing.
<b>Dry Vitamin E 50% CWS/S</b> Spray dried, cold water dispersible. Starch-based. 500 IU Vitamin E/g 336 mg $\alpha$ -Tocopherol Equivalent/g	Kosher, Halal	20 20	50 01129.341 (Origin: Switzerland) 50 12740.341 (Origin: France)	For tablets, effervescent tablets and hard-shell capsules. For fortification of foods and beverages.
<b>Dry Vitamin E 50%, Type SD</b> Spray dried. 500 IU Vitamin E/g 336 mg $\alpha$ -Tocopherol Equivalent/g	Kosher	15	50 14077.281	For tablets and hard-shell capsules. For fortification of dry foods products, including those to be mixed with cold water before use.
<b>Dry Vitamin E Acetate 50% Type SD</b> Spray dried. 500 IU Vitamin E/g 336 mg $\alpha$ -Tocopherol Equivalent/g	Kosher	50 <sup>†</sup>	04 88550.395	For tablets and hard-shell capsules. For fortification of dry foods products, including those to be mixed with cold water before use.
<b>Dry Vitamin E 75 HP</b> Beadlet, High potency. 750 IU Vitamin E/g 503 mg $\alpha$ -Tocopherol Equivalent/g	Kosher, Halal	20 50 <sup>†</sup>	04 83567.341 04 83567.402	For higher levels of vitamin E in tablets and hard-shell capsules.

<sup>†</sup> Only for North America.

<b>Vitamin E – Natural Source (d-<math>\alpha</math>-Tocopheryl Acetate)</b>				
<b>d-<math>\alpha</math>-Tocopheryl Acetate</b> 1360 IU Vitamin E/g 913 mg $\alpha$ -Tocopherol Equivalent/g	Kosher, Halal	20 190	04 86574.343 04 86574.422	For soft gelatin capsules. For fortification of oils and fat-based foods.
<b>Dry Vitamin E 700 NS</b> Spray dried, cold water dispersible. Starch-based. 700 IU Vitamin E/g 470 mg $\alpha$ -Tocopherol Equivalent/g	Kosher, Halal	20	50 11892.341	For hard-shell capsules. For fortification of foods and beverages.
<b>Dry Vitamin E Acetate 950 NS</b> Beadlet, High potency. 950 IU Vitamin E/g 638 mg $\alpha$ -Tocopherol Equivalent/g	Kosher, Halal	5 20 50 <sup>†</sup>	04 86884.304 04 86884.341 04 86884.402	For higher levels of vitamin E in tablets and hard-shell capsules.


<sup>†</sup> Only for North America.

<b>Mixed Tocopherols</b>				
<b>Mixed Tocopherol 95</b>	Kosher, Halal	20 190	50 02893.343 50 02893.422	As an antioxidant stabilizing oils and fat-based foods. For soft gelatin capsules.
<b>Dry Mixed Tocopherols 30%</b>	Kosher, Halal	20	50 00149.341	For dry vitamin/mineral formulations and as an antioxidant stabilizing fats and oils.


<b>Vitamin K1 (Phylloquinone, Phytonadione, Phytomenadione)</b>				
<b>Vitamin K1</b>	Kosher, Halal	0.1 1	04 35015.246 04 35015.264	For soft gelatin capsules. For fortification of selected foods.
<b>Dry Vitamin K1 5% SD</b> Based on gum acacia. 50 mg Vitamin K1/g	Kosher, Halal	1 20	04 34922.268 04 34922.341	For tablets, hard-shell capsules and infant formulations. For fortification of dry food products, including those to be mixed with cold water before use.



# Water-soluble vitamins

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>Thiamin (Vitamin B<sub>1</sub>)</b> 				
<b>Thiamine Hydrochloride</b>	Kosher, Halal	20	04 13038.341	For solid and liquid formulations. For general food fortification and dietary supplement applications.
<b>Thiamine Mononitrate</b>	Kosher, Halal	20	04 18943.341	For solid and liquid formulations. For general food fortification and dietary supplement applications.
<b>ROCOAT® Thiamine Mononitrate 33 1/3% Coated</b>	Kosher, Halal	5 50 <sup>†</sup>	04 29473.304 04 29473.402	For chewable tablets. For fortification of foods where improved stability or taste masking is desired.

<sup>†</sup> Only for North America.

<b>Riboflavin (Vitamin B<sub>2</sub>)</b> 				
<b>Riboflavin 5'-Phosphate Sodium</b>	Kosher, Halal	1 5 25	04 21413.608 04 21413.605 04 21413.672	For solid and liquid formulations. For general food fortification and dietary supplement applications.
<b>Riboflavin Tablet Grade</b>	Kosher, Halal	10	04 70295.231	Especially suited for direct compression of tablets. May also be used for fortification of cereals, pasta dietetics and other dry food preparations, and for the coloration of light-protected food products in liquid and powder form.
<b>Riboflavin Universal</b>	Kosher, Halal	10	04 70406.231	For the fortification of cereals, pasta, dietetics and other dry food preparations, and for the coloration of light-protected food products in liquid and powder form.
<b>Riboflavin Universal Fine Powder</b>	Kosher, Halal	5 2 x 2.5	50 08611.295 50 08611.186	For the fortification of cereals, pasta products, dietetics and other dry foods preparations, and for the coloration of light-protected food products in liquid and powder form. For chewable tablets.
<b>ROCOAT® Riboflavin 33 1/3% Coated</b>	Kosher, Halal	5 50 <sup>†</sup>	04 29465.304 04 29465.402	For chewable tablets. For fortification of foods where improved stability and taste-masking is desired.

<sup>†</sup> Only for North America.

# Water-soluble vitamins

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>Niacin (Niacinamide, Vitamin B3)</b>				
<b>Niacinamide</b>	Kosher, Halal	20	04 87848.340	For solid and liquid formulations. For general food fortification and dietary supplement applications.
<b>Niacinamide Free Flowing</b>	Kosher, Halal	25 <sup>†</sup>	50 02141.346	For solid and liquid formulations. For general food fortification.
<b>Niacinamide Powder</b>	Kosher, Halal	25	50 10810.366	For solid and liquid formulations. For general food fortification.
<b>Niacin</b> Nicotinic acid Powder	Kosher, Halal	20 500 <sup>†</sup>	50 10837.340 50 10837.429	For solid and liquid vitamin/mineral formulations. For general food fortification.
<b>ROCOAT® Niacinamide 33 1/3% Coated</b>	Kosher, Halal	5	04 29449.304	For chewable tablets. For fortification of foods where improved stability or taste masking is desired.
<sup>†</sup> Only for North America.				
<b>Pantothenic acid (Vitamin B5)</b>				
<b>Calcium D-Pantothenate</b> Spray-dried	Kosher, Halal	25	04 12678.366	For tablets and hard-shell capsules. For general food fortification.
<b>Panthenol (Pro-Vitamin B5)</b>				
<b>D-Panthenol</b> Liquid	Kosher, Halal	20	04 13852.331	For liquid formulations. For general food fortification.
<b>Vitamin B6 (Pyridoxine)</b>				
<b>Pyridoxine Hydrochloride</b>	Kosher, Halal	20	04 11604.340	For solid and liquid formulations. For general food fortification and dietary supplement applications.
<b>ROCOAT® Pyridoxine Hydrochloride 33 1/3% Coated</b>	Kosher, Halal	5 50 <sup>†</sup>	04 29457.304 04 29457.402	For chewable tablets. For fortification of foods where improved stability or taste masking is desired.
<sup>†</sup> Only for North America.				
<b>Folate (Folic acid, Vitamin B9)</b>				
<b>Folic Acid</b>	Kosher, Halal	1 25	04 17823.268 04 17823.372	For solid and liquid vitamin/mineral formulations. For general dietary supplement applications. For fortification of cereal-based foods and meal replacements.
<b>Folic Acid Food Grade</b>	Kosher, Halal	1 25	50 04357.268 50 04357.372	For general food fortification. For fortification of cereal-based foods and meal replacements.
<b>Vitamin B12 (Cyanocobalamin)</b>				
<b>Vitamin B12 Crystalline</b>	Kosher, Halal	0.01 0.1 1	04 29155.234 04 29155.252 04 29155.264	For solid and liquid formulations. For general food fortification and dietary supplement applications.
<b>Vitamin B12 1% SD</b>	Kosher, Halal	5 20	50 12511.304 50 12511.341	For higher B12 levels in tablets and hard-shell capsules. For general food fortification.
<b>Vitamin B12 0.1% WS</b>	Kosher, Halal	5	04 29090.304	For lower B12 levels in tablets and hard-shell capsules. For general food fortification.

Quali-B®

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# Water-soluble vitamins

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<div> <b>Biotin (Vitamin H)</b>  </div>				
<b>D-Biotin</b>	Kosher, Halal	0.05 1 25	50 11655.240 50 11655.270 50 11655.372	For solid and liquid formulations. For general food fortification and dietary supplement applications.
<b>Bitrit-1 Type A</b> 1% trituration	Kosher, Halal	10 50	50 12732.190 50 12732.395	For various dietary supplement applications and food products when better distribution is desired.

## Vitamin C (L-Ascorbic Acid)




<b>Ascorbic Acid</b>	Kosher, Halal	25 25 500	04 08050.366 04 08050.368 04 08050.429	For solid and liquid formulations. For general food fortification, as a dough conditioner, as an antioxidant and for curing meats.
<b>Ascorbic Acid Fine Powder</b>	Kosher, Halal	25 25	04 22460.366 04 22460.368	For solid and liquid formulations. For general food fortification, as a dough conditioner, as an antioxidant for curing meats.
<b>Ascorbic Acid Ultra Fine Powder</b>	Kosher, Halal	20 50 <sup>†</sup>	50 09766.341 04 08107.695	For solid and liquid formulations. For general food fortification, as a dough conditioner, as an antioxidant for curing meats.
<b>Ascorbic Acid Fine Granular</b>	Kosher, Halal	25 25	04 08093.366 04 08093.368	For solid and liquid formulations. For general food fortification, as a dough conditioner, as an antioxidant and for curing meats.
<b>Ascorbic Acid 90% Granulation</b>	Kosher, Halal	25	50 07577.169	For direct compression tablets and hard-shell capsules.
<b>Ascorbic Acid 95% Granulation</b>	Kosher, Halal	25	50 07747.169	For direct compression tablets and hard-shell capsules.
<b>Coated Ascorbic Acid, Type EC</b> 97.5% ascorbic acid content. Ethyl cellulose coating	Kosher, Halal	25	04 25117.368	For dry food preparation in countries where ethyl cellulose is permitted as food additive. For mono and multivitamin preparations.
<b>Coated Ascorbic Acid, Type FC</b> 94% ascorbic acid content Fat coating	Kosher, Halal	25	04 40809.368	For dry food preparations.
<b>Romax®</b> Niacinamide Ascorbate	Kosher	50	04 67707.402	Nutrient, dietary supplement, ascorbic acid and nicotinamide source. For direct compression tablets and hard-shell capsules.
<b>Calcium Ascorbate</b>	Kosher, Halal	25	04 19443.368	For solid and liquid formulations. For fortification of low-sodium foods.
<b>Sodium Ascorbate Crystalline</b>	Kosher, Halal	25	04 08174.606	For solid and liquid formulations. For general food fortification, as a dough conditioner, as an antioxidant and for curing meats.
<b>Sodium Ascorbate 99% TG</b> Tablet grade	Kosher, Halal	20	50 01420.341	For direct compression tablets and hard-shell capsules.
<b>Ascorbyl Palmitate</b>	Kosher, Halal	5 25	04 18595.304 04 18595.368	As an antioxidant to stabilize oils and fat-based foods.
<b>RONOXAN® A</b> Ascorbyl Palmitate, dl-α-Tocopherol, Lecithin	Kosher, Halal	1	04 42534.270	As an antioxidant for vegetable oils, animal fats, and fat containing products such as sauces, salad dressings, mayonnaise and biscuits.

<sup>†</sup>Only for North America.



# Nutritional lipids

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>life'sDHA® (Vegetarian Omega-3 Long Chain Polyunsaturated Fatty Acids)</b> 				
<b>DHASCO®</b> Nutritional oil from microalgae containing min. 40% DHA	Kosher, Halal	9 18 200	50 13658.043 50 13658.044 50 13658.046	For fortification of infant formula products, supplements and products for pregnancy and nursing.
<b>life'sDHA® S17-P100</b> Free flowing powder derived from microalgae containing 17% DHA (170 mg/g)	Halal, Kosher	12.5	50 13712.148	For fortification of selected and food and beverage products.
<b>life'sDHA® S10-P200</b> Free flowing powder derived from microalgae containing 10% DHA (100mg/g)	Halal, Kosher	12.5	50 13720.148	For fortification of selected food and beverage products.
<b>life'sDHA® 100mg Vegetarian Capsules</b> DHA-S oil in a 300mg (14 oval) carrageenan vegetarian capsule providing 100mg of DHA	Halal	8000 capsules	50 13739.035	Bulk vegetarian capsules for use in a variety of supplement applications.
<b>life'sDHA® 200mg Vegetarian Capsules</b> DHA-S oil in a 600mg (14 oval) carrageenan vegetarian capsule providing 200mg of DHA	Halal	8000 capsules	50 13747.035	Bulk vegetarian capsules for use in a variety of supplement applications.
<b>life'sDHA® S35-O300</b> Nutritional oil derived from algae containing min. 35% DHA (350mg/g)	Halal, Kosher	1 5 23 180	50 13755.264 50 13755.294 50 13755.037 50 13755.418	For fortification of foods, beverages and dietary supplements.
<b>life'sDHA® C53-O100</b> Nutritional oil from microalgae containing min. 53% DHA (530 mg/g)	Halal, Kosher	9 18 200	50 13860.043 50 13860.044 50 13860.046	For fortification of dietary supplements and pregnancy and nursing products.
<b>DHASCO® C40-O100</b> Nutritional oil from microalgae containing min. 40% DHA (400mg/g)	Halal, Kosher	9 18 200	50 13879.043 50 13879.044 50 13879.046	For fortification of dietary supplements and pregnancy and nursing products.

# Nutritional lipids

## PRODUCT AND DESCRIPTION

## CERTIFICATION

## PACK SIZE (KG)

## PRODUCT CODE

## MAIN APPLICATION



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

<b>life'sOMEGA™ 45</b> (2412 – 0100) From microalgae. Minimum 45% total omega-3	Halal, Kosher	1 5 23 180	50 13690.264 50 13690.294 50 13690.037 50 13690.418	For fortification of foods, beverages and dietary supplements.
<b>life'sOMEGA™ 60</b> (055 – 0100) From microalgae. Minimum 60% total omega-3	Halal, Kosher	1 5 23 180	50 15295.264 50 15295.294 50 15295.037 50 15295.418	For soft gelatin capsules.
<b>life'sOMEGA™ 300mg Vegetarian Capsules</b> life'sOMEGA™-O oil in a 790 mg (14 oval) carrageenan vegetarian capsule providing 300 mg of DHA/EPA	Halal, Kosher	6000 capsules	50 15010.034	Bulk vegetarian capsules for use in a variety of supplement applications.



### life'sGLA™ (Vegetarian Omega-6 Long Chain Polyunsaturated Fatty Acids)

<b>life'sGLA™ '10' n-6 Oil</b> Refined Evening Primrose Oil. Minimum 9% γ-linolenic acid (GLA)	Kosher, Halal	25 185	04 22398.354 04 22398.222	For soft gelatin capsules, topical applications or enrichment of selected foods.
<b>life'sGLA™ '25' n-6 Oil</b> Refined Borage Oil. Minimum 23% γ-linolenic acid (GLA)	Halal, Kosher	25 185	50 08549.358 50 08549.223	For soft gelatin capsules, topical applications or enrichment of selected foods.
<b>life'sGLA™ '10' n-6 Powder</b> Encapsulated. Minimum 9% γ-linolenic acid (GLA)	Kosher, Halal	2.5	04 28981.276	For solid dietary supplements or of selected foods.



### life'sARA™ (Vegetarian Omega-6 Long Chain Polyunsaturated Fatty Acids)

<b>ARASCO™ oil</b> From fungi containing min 38% ARA	Halal, Kosher	9 18 200	5015002.043 5015002.044 5015002.046	For fortification of infant formula products.
<b>life'sARA™ '12' n-6 ARA Powder</b> Minimum 12% arachidonic acid (ARA)	Halal	5	50 03245.304	For use in food, baby food and nutritional applications.



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

<b>Formulaid™ (1:1 ARA:DHA)</b> From fungi and microalgae containing 1 part ARASCO™ and 1 part DHASCO™	Halal, Kosher	9 18 200	50 13895.043 50 13895.044 50 13895.046	For fortification of infant formula products.
<b>Formulaid™ (1.75:1 ARA:DHA)</b> From fungi and microalgae containing 1.75 parts ARASCO™ and 1 part DHASCO™	Halal, Kosher	9 18 200	50 13887.043 50 13887.044 50 13887.046	For fortification of infant formula products.
<b>Formulaid™ (2:1 ARA:DHA)</b> From fungi and microalgae containing 2 parts ARASCO™ and 1 part DHASCO™	Halal, Kosher	9 18 200	50 13909.043 50 13909.044 50 13909.046	For fortification of infant formula products.



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

<b>MEG-3® 0355 TG Oil</b> Triglycerides, minimum 50mg EPA, 365mg DHA and 590mg total Omega-3 per g		190	50 15151.420	For dietary supplements.
<b>MEG-3® 1812 TG Oil</b> Triglycerides, minimum 160mg EPA, 100mg DHA and 300mg total Omega-3 per g		190	50 15165.420	For dietary supplements.
<b>MEG-3® 2014 TG Oil</b> Triglycerides, minimum 180mg EPA, 120mg DHA and 350mg total Omega-3 per g		190	50 15167.420	For dietary supplements.
<b>MEG-3® 3322 TG Oil</b> Triglycerides, minimum 270mg EPA, 180mg DHA and 500mg total Omega-3 per g		190	50 15207.420	For dietary supplements.
<b>MEG-3® 3525 TG Oil</b> Triglycerides, minimum 290mg EPA, 200mg DHA and 540mg total Omega-3 per g		190	50 15218.420	For dietary supplements.
<b>MEG-3® 3626 TG Oil</b> Triglycerides, minimum 320mg EPA, 230mg DHA and 600mg total Omega-3 per g		190	50 15222.420	For dietary supplements.
<b>MEG-3® 4020 TG Oil</b> Triglycerides, minimum 360mg EPA, 180mg DHA and 590mg total Omega-3 per g		190	50 15234.420	For dietary supplements.
<b>MEG-3® 6003 TG Oil</b> Triglycerides, minimum 500mg EPA, 25mg DHA and 600mg total Omega-3 per g		190	50 15261.420	For dietary supplements.
<b>MEG-3® 30% TG Oil</b> Triglycerides, minimum 260mg EPA + DHA and 300mg total Omega-3 per g		190	50 15198.420	For dietary supplements.

# Nutritional lipids

PRODUCT AND DESCRIPTION

CERTIFICATION

PACK  
SIZE (KG)

PRODUCT CODE

MAIN APPLICATION



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

<b>MEG-3® 30% TG Ic Oil</b> Triglycerides, minimum 260mg EPA + DHA and 300mg total Omega-3 per g		190	50 15197.420	For dietary supplements.
<b>MEG-3® 2050 EE Oil</b> Ethyl esters, minimum 180mg EPA, 440mg DHA and 660mg total Omega-3 per g		190	50 15171.420	For dietary supplements.
<b>MEG-3® 3020 EE Oil</b> Ethyl esters, minimum 270mg EPA, 180mg DHA and 500mg total Omega-3 per g		190	50 15201.420	For dietary supplements.
<b>MEG-3® 3322 EE Oil</b> Ethyl esters, minimum 290mg EPA, 190mg DHA and 530mg total Omega-3 per g		190	50 15205.420	For dietary supplements.
<b>MEG-3® 3327 EE Oil</b> Ethyl esters, minimum 300mg EPA, 250mg DHA and 600mg total Omega-3 per g		190	50 15209.420	For dietary supplements.
<b>MEG-3® 3424 EE Oil</b> Ethyl esters, minimum 300mg EPA, 200mg DHA and 600mg total Omega-3 per g		190	50 15211.420	For dietary supplements.
<b>MEG-3® 3525 EE Oil</b> Ethyl esters, minimum 310mg EPA, 220mg DHA and 600mg total Omega-3 per g		190	50 15217.420	For dietary supplements.
<b>MEG-3® 3626 EE Oil</b> Ethyl esters, minimum 320mg EPA, 220mg DHA and 600mg total Omega-3 per g		190	50 15220.420	For dietary supplements.
<b>MEG-3® 4020 EE Oil</b> Ethyl esters, minimum 360mg EPA, 180mg DHA and 590mg total Omega-3 per g		190	50 15227.420	For dietary supplements.
<b>MEG-3® 4030 EE Oil</b> Ethyl esters, minimum 360mg EPA, 270mg DHA and 680mg total Omega-3 per g		190	50 15241.420	For dietary supplements.
<b>MEG-3® 4027 EE Oil</b> Ethyl esters, minimum 342mg EPA, 228mg DHA and 640mg total Omega-3 per g		190	50 15237.420	For dietary supplements.
<b>MEG-3® 4421 EE Oil</b> Ethyl esters, minimum 400mg EPA, 200mg DHA and 650mg total Omega-3 per g		190	50 15243.420	For dietary supplements.
<b>MEG-3® 5020 EE Oil</b> Ethyl esters, minimum 460mg EPA, 180mg DHA and 700mg total Omega-3 per g		190	50 15252.420	For dietary supplements.
<b>MEG-3® 6003 EE Oil</b> Ethyl esters, minimum 500mg EPA, 40mg DHA and 590mg total Omega-3 per g		190	50 15258.420	For dietary supplements.
<b>MEG-3® 30% 3a Food Oil</b> Steam deodorized triglycerides, minimum 260mg EPA + DHA and 280mg total Omega-3 per g		190	50 15183.420	For dietary supplements.
<b>MEG-3® 1812 TG 3a Food Oil</b> Steam deodorized triglycerides, minimum 160mg EPA, 100mg DHA and 280mg total Omega-3 per g		190	50 15161.420	For dietary supplements.
<b>MEG-3® 1812 TG 8a Oil</b> Steam deodorized triglycerides, minimum 160mg EPA, 100mg DHA and 280mg total Omega-3 per g		190	50 15162.420	For dietary supplements.
<b>MEG-3® 3424 TG SD Oil</b> Steam deodorized triglycerides, minimum 300-340mg EPA, 250mg DHA and 600mg total Omega-3 per g		190	50 15216.420	For dietary supplements.
<b>MEG-3® 3424 EE SD Oil</b> Steam deodorized ethyl esters, minimum 300mg EPA, 200mg DHA and 600mg total Omega-3 per g		190	50 15213.420	For dietary supplements.
<b>MEG-3® 4020 EE SD Oil</b> Steam deodorized ethyl esters, minimum 360mg EPA, 180mg DHA and 590mg total Omega-3 per g		190	50 15231.420	For dietary supplements.
<b>MEG-3® 4030 EE SD Oil</b> Steam deodorized ethyl esters, minimum 360mg EPA, 270mg DHA and 680mg total Omega-3 per g		190	50 15242.420	For dietary supplements.
<b>MEG-3® 4421 EE SD Oil</b> Steam deodorized ethyl esters, minimum 400mg EPA, 200mg DHA and 720mg total Omega-3 per g		190	50 15291.420	For dietary supplements.
<b>MEG-3® DHA K Food Oil</b> Triglycerides, minimum 45mg EPA, 220mg DHA and 280mg total Omega-3 per g	Kosher	15.85 190	50 15276.152 50 15275.420	For fortification of food and beverages.
<b>MEG-3® DHA Food Oil</b> Triglycerides, minimum 45mg EPA, 220mg DHA and 280mg total Omega-3 per g		15.85 190	50 15268.152 50 15267.420	For fortification of food and beverages.
<b>MEG-3® 30% 8a Food Oil</b> Triglycerides, minimum 250mg – maximum 320mg EPA+DHA, minimum 300mg total Omega-3 per g		15.85 190	50 15184.152 50 15184.420	For fortification of food and beverages.
<b>MEG-3® 29% K Food Oil</b> Triglycerides, minimum 250mg – maximum 320mg EPA+DHA per g	Kosher	15.85 190	50 15180.152 50 15180.420	For fortification of food and beverages.
<b>MEG-3® 29% K O Food Oil</b> Triglycerides, minimum 250mg EPA+DHA and 300mg total Omega-3 per g		15.85	50 15182.152	For fortification of food and beverages.
<b>MEG-3® DHA Inf Food Oil</b> Triglycerides, minimum 45mg EPA, 220mg DHA and 280mg total Omega-3 per g		18 190	50 15274.044 50 15273.420	For fortification of infant formula products.
<b>MEG-3® '30' n-3 INF Oil</b> Triglycerides, minimum 30% total n-3 polyunsaturated fatty acids. Minimum 23% DHA. Ratio DHA to EPA minimum 4.5	Halal	5 25 190	50 15289.302 50 15289.372 50 15289.420 (Origin: Canada)	For fortification of selected foods especially infant formula and maternal products.

# Nutritional lipids

## PRODUCT AND DESCRIPTION

## CERTIFICATION

## PACK SIZE (KG)

## PRODUCT CODE

## MAIN APPLICATION



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

<b>MEG-3® '30' n-3 Food Oil</b> Triglycerides, minimum 30% total n-3 polyunsaturated fatty acids. Minimum 25% DHA + EPA. Minimum 9% EPA. Minimum 12.5% DHA	Halal	1 25 190	50 15290.302 50 15290.372 50 15290.420 (Origin: Canada)	For use in foods and dietary supplements.
<b>MEG-3® '15' n-3 Emulsion LV</b> Minimum 15% total n-3 polyunsaturated fatty acids. Minimum 12.5% EPA + DPA + DHA. Minimum 6.25% DHA and 4.5% EPA	Halal	10L	50 09685.098	For fortification of selected foods, especially dairy. Also for use in dietary supplements.



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

<b>MEG-3® 30% K Powder</b> Microencapsulated powder <sup>†††</sup> based on fish gelatin, minimum 54mg EPA, 35mg DHA (Min 150mg – Max 204mg EPA + DHA) and 180mg total Omega-3 per g	Kosher	10	50 15191.322	For fortification of food and beverage products.
<b>MEG-3® 30% H Powder</b> Microencapsulated powder <sup>†††</sup> based on fish gelatin, minimum 54mg EPA, 35mg DHA (Min 150 mg – Max 204mg EPA + DHA) and 180 mg total Omega-3 per g	Kosher	10	50 15189.322	For fortification of food and beverage products.
<b>MEG-3® DHA K Powder</b> Microencapsulated powder <sup>†††</sup> based on fish gelatin, minimum 27mg EPA, 132mg DHA (Min 168mg – Max 204mg EPA + DHA) and 184mg total Omega-3 per g	Kosher	10	50 15277.322	For fortification of food and beverage products.
<b>MEG-3® DHA H Powder</b> Microencapsulated powder <sup>†††</sup> based on fish gelatin, minimum 27mg EPA, 132mg DHA (Min 168mg – Max 204mg EPA + DHA) and 184mg total Omega-3 per g	Kosher	10	50 15270.322	For fortification of food and beverage products.
<b>MEG-3® '10' n-3 INF Powder S/SD</b> Minimum 7% DHA. Ratio DHA to EPA minimum 4.5	Halal	5	50 06392.304	For use in food, baby food and nutritional applications.
<b>MEG-3® '15' n-3 High DHA Powder S/SD</b> Minimum 11% DHA. Ratio DHA to EPA minimum 4.5	Halal	5	50 11639.304	For use in food, baby food and nutritional applications.
<b>MEG-3® '10' n-3 Food Powder S/SD</b> Minimum 7% DHA + EPA	Halal	5	50 09529.276	For fortification of selected foods.
<b>MEG-3® '10' n-3 INF Powder</b> Minimum 7% DHA Ratio DHA to EPA minimum 4	Halal	5	04 80398.304	For fortification of selected foods especially infant formula and maternal products. Also for use in dietary supplements.

<sup>†††</sup> Product formulations which utilise Powderloc™ technology

### MEG-3® products – notes

Additional products may currently be available in some regions. Only a limited selection of MEG-3® soft gel capsules is available. Please contact your regional sales office.



# Nutraceuticals and specialty products

## PRODUCT AND DESCRIPTION

## CERTIFICATION

## PACK SIZE (KG)

## PRODUCT CODE

## MAIN APPLICATION



### Coenzyme Q10

<b>ALL-Q® (Coenzyme Q10) 10% CWS/S</b> Beadlet <sup>††</sup> , cold water dispersible. Starch-based	Kosher, Halal,	5 25	50 04160.304 50 04160.368	For fortification of selected foods and beverages. For effervescent tablets.
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<sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® improves absorption and eases handling.

### Specialty emulsion for satiety



<b>Fabuless® 42</b> Lipid emulsion, 42% functional lipid emulsion of palm oil, oat oil and water	Kosher, Halal	20 520 950	50 10896.340 50 10896.139 50 10896.124	For fortification of selected foods and beverages. For select liquid dietary formulations.
<b>Fabuless® DE</b> Fine powder, 33% functional lipid content from palm oil, oat oil and dried glucose syrup	Kosher, Halal	20	51 14000.341	For fortification of selected foods and beverages. For select powdered dietary supplement formulations.


### Heart healthy tomato-based extract



<b>Fruitflow® I</b> Liquid (syrup), water soluble	Kosher	20 215	50 12724.202 50 12724.143	For food and beverage applications.
<b>Fruitflow® II SD</b> Dry powder, water soluble	Kosher	1 5 20	50 15118.268 5015118.304 5015118.340	For food and beverage and dietary supplement applications.

Fruitflow® is a trademark of Provexis Plc. used under licence by DSM.

# Nutraceuticals and specialty products

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>High-purity genistein</b> 				
<b>geniVida®</b> Crystalline powder, minimum 98.5% genistein	Kosher, Halal	1 5 1 5	50 11604.268 50 11604.304 (Origin Switzerland) 50 14204.268 50 14204.304 (Origin Austria)	For dietary supplement formulations.
<b>geniVida® TG</b> Tablet grade	Kosher	1 5	50 11590.268 50 11590.304	For direct compression tablets and hard-shell capsules.

## Nucleotides

<b>Cytidine-5'-Monophosphate Free Acid</b>	Kosher, Halal	20	50 05604.299	For infant nutrition. Sold only via blends.
<b>Uridine-5'-Monophosphate Disodic</b>	Kosher, Halal	20	50 05612.299	For infant nutrition. Sold only via blends.
<b>Inosine-5'-Monophosphate Disodic</b>	Kosher, Halal	20	50 05620.299	For infant nutrition. Sold only via blends.
<b>Guanosine-5'-Monophosphate Disodic</b>	Kosher, Halal	20	50 05639.299	For infant nutrition. Sold only via blends.
<b>Adenosine-5'-Monophosphate Free Acid</b>	Kosher, Halal	20	50 05647.299	For infant nutrition. Sold only via blends.

## Dairy-based peptide

<b>PeptoPro®</b>		15	50 07143.201	Di and tri peptides for better sports performance. For powdered beverages and gels.
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## Oat beta-glucan

<b>OatWell® 14</b> Dry powder, oat bran with 13 – 15% beta-glucan	Kosher	18 600	50 15097.289 50 15097.426	For various food applications.
<b>OatWell® 22</b> Dry powder, oat bran with 21 – 23% beta-glucan	Kosher	18 700	50 15099.289 50 15099.431	For various food applications.
<b>OatWell® 28</b> Dry powder, oat bran with 27 – 29% beta-glucan	Kosher	18	50 15101.289	For various food applications.
<b>OatWell® 14 XF</b> Fine powder, oat bran with 13 – 15% beta-glucan	Kosher	18	50 1509 8.289	For various food applications.
<b>OatWell® 22 XF</b> Fine powder, oat bran with 21 – 23% beta-glucan	Kosher	18	50 1510 0.289	For various food applications.
<b>OatWell® 28 XF</b> Fine powder, oat bran with 27 – 29% beta-glucan	Kosher	18	50 1510 2.289	For various food applications.

## High-purity trans-resveratrol

<b>resVida®</b> Crystalline powder, minimum 99% trans-resveratrol	Kosher	1 5 20	50 14395.268 50 14395.304 50 14395.344	For use in solid and liquid supplements and selected foods and beverages.
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## High-purity EGCG

<b>Teavigo®</b> Crystalline powder, minimum 94% EGCG from natural green tea extract	Kosher	1	50 09227.270	For fortification of selected foods and beverages.
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## Digestive enzymes

<b>Tolerase™ L</b> Acid lactase Micro granulated powder, 100,000 ALU/g	Kosher, Halal	5	50 14549.304	For dietary supplements and foods.
<b>Tolerase™ P 20000G</b> Phytase Micro granulated powder, 20,000 FTU/g	Kosher, Halal	5	50 12783.304	For foods, beverages and dietary supplements.

**Tolerase™ L** **Tolerase™ P**



# Natural ingredients\*

CATEGORY	PRODUCT	DESCRIPTION	MAIN APPLICATION
<b>Nutritional lipids</b>	life'sDHA® MEG-3®	Vegetarian Omega-3 long chain polyunsaturated fatty acids** Omega-3 polyunsaturated fatty acids from fish oil	For use in foods and beverages. For use in foods, beverages and supplements.
<b>Carotenoids</b>	CaroCare® FloraGLO®	β-Carotene Lutein	For use in foods, beverages and supplements. For use in foods, beverages and supplements.
<b>Vitamins</b>	Vitamin E Vitamin B2 Vitamin B12	d-α-tocopheryl Acetate Riboflavin Cyanocobalamin	For use in foods, beverages and supplements. For use in foods, beverages and supplements. For use in foods, beverages and supplements.
<b>Nutraceuticals</b>	Fruitflow® Fabules® PeptoPro® ALL-Q® OatWell® Teavigo® Tolerase™ L Tolerase™ P	Tomato-based extract for enhanced blood flow Specialty emulsion for satiety Dairy-based peptide for improved sports performance Coenzyme Q10 Oat beta-glucan High-purity EGCG Acid lactase Phytase	For use in foods, beverages and supplements. For use in foods and beverages. For use in foods, powdered beverages and gels. For use in foods, beverages and supplements. For use in foods, beverages and supplements. For use in foods, beverages and supplements. For use in dietary supplements and foods. For use in foods, beverages and supplements.

\* While labeling regulations vary by country, DSM can support our customers' products being positioned as 'natural' with the above ingredients

\*\* life'sDHA® is naturally sourced.



# Antioxidants for longer shelf life

PRODUCT AND DESCRIPTION	CERTIFICATION	PACK SIZE (KG)	PRODUCT CODE	MAIN APPLICATION
<b>dl-<math>\alpha</math>-Tocopherol</b> 1100 IU Vitamin E/g 738 mg $\alpha$ -Tocopherol Equivalent/g	Kosher, Halal	5 20 50 <sup>†</sup>	04 10276.294 04 10276.336 04 10276.396	For soft gelatin capsules. As an antioxidant stabilizing oils and fat-based foods.
<b>Mixed Tocopherol 95</b>	Kosher, Halal	20 190	50 02893.343 50 02893.422	As an antioxidant stabilizing oils and fat-based foods. For soft gelatin capsules.
<b>Dry Mixed Tocopherols 30%</b>	Kosher, Halal	20	50 00149.341	For dry vitamin/mineral formulations and as an antioxidant stabilizing fats and oils.
<b>Ascorbic Acid</b>	Kosher, Halal	25 25 500	04 08050.366 04 08050.368 04 08050.429	For solid and liquid vitamin/mineral formulations. For general food fortification, as a dough conditioner, as an antioxidant and for curing meats.
<b>Sodium Ascorbate Crystalline</b>	Kosher, Halal	25	04 08174.606	For solid and liquid vitamin/mineral formulations. For general food fortification, as a dough conditioner, as an antioxidant and for curing meats.
<b>Ascorbyl Palmitate</b>	Kosher, Halal	5 25	04 18595.304 04 18595.368	As an antioxidant to stabilize oils and fat-based foods.
<b>RONOXAN® A</b> Ascorbyl Palmitate, dl- $\alpha$ -Tocopherol, Lecithin	Kosher, Halal	1	04 42534.270	As an antioxidant for vegetable oils, animal fats, and fat containing products such as sauces, salad dressings, mayonnaise and biscuits.
<b>Teavigo®</b> Crystalline powder, minimum 94% EGCG from natural green tea extract	Kosher, Halal	1	50 09227.270	For fortification of selected foods and beverages.

## Ronoxan®

Please contact your DSM representative to find out which synergistic Ronoxan® antioxidant blends can be used to protect your application.

<sup>†</sup>Only for North America

# Additional information

## Carotenoids

### 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.

### Apocarotenal

**ROLE:** Apocarotenal is scientifically recognized to provide about 50% of vitamin A activity of β-Carotene.

**FOOD SOURCES:** Citrus fruits and green vegetables such as oranges or spinach.

### Lutein

**ROLE:** In addition to zeaxanthin, lutein is the other major carotenoid found in the eye, specifically located in the macula. Lutein is a potent antioxidant 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. Lutein cannot be synthesized by humans and must be taken from the diet. The recent findings of scientific studies point to a lutein role also for visual performance in healthy people.

**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.

### Lycopene

**ROLE:** Lycopene is the carotenoid responsible for the red color in tomatoes and is the most abundant carotenoid in human serum. As a strong antioxidant, 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.

### Zeaxanthin

**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.

## Nutraceuticals and specialty products

### Genistein (geniVida®)

**ROLE:** Genistein is an isoflavone found in soybeans, soy flour, soy milk, soy protein concentrate (water washed), soy protein isolates, that has the ability to bind selectively to the estrogen alpha and beta receptors and modulate gene expression. geniVida®/BONISTEIN® 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.

### 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.

### Coenzyme Q10 (ALL-Q®)

**ROLE:** Coenzyme Q10 (CoQ10) is an antioxidant 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; small amounts in some vegetables such as broccoli and cauliflower.

### Emulsion of palm and oat oil (Fabules®)

**ROLE:** Fabules® is a patent-protected combination of palm and oat oil (both naturally occurring lipids) that is formulated in a novel emulsion therefore helping people to manage their energy intake. Its microstructure prevents early digestion 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.

**FOOD SOURCES:** Palm and oat.

### Epigallocatechin gallate (Teavigo®)

**ROLE:** EGCG is the most abundant catechin found in green tea, with demonstrated potent antioxidant and anti-inflammatory activity. Based on pre-clinical and clinical studies EGCG has been associated with reducing the risk for various chronic diseases such as cancer, cardiovascular and neurological diseases.

**FOOD SOURCES:** EGCG is found naturally in green tea leaves and is found in varying concentrations in green tea, oolong tea, and black tea extracts and beverages.

### Dairy-based peptide (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 tri peptides 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.

#### EU HEALTH CLAIM:

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

**FOOD SOURCES:** Dairy, specialized hydrolysates.

### Water-soluble tomato concentrate (FruitFlow®)

**ROLE:** Fruitflow® is a water-soluble tomato-based extract. This breakthrough ingredient helps maintain normal platelet aggregation, which contributes to healthy blood flow. In human trials, consumption of the Fruitflow® has been proven to reduce platelet aggregation in 97% of subjects. The acute effect takes place within 1,5 hours of consumption and lasts for 12 to 18 hours. When taken regularly on a once per day basis, the effect is continuous.

#### EU HEALTH CLAIM:

Fruitflow® helps maintain normal platelet aggregation, which contributes to healthy blood flow.

**FOOD SOURCES:** Tomatoes.

## Nutraceuticals and specialty products *continued*

### Oat beta-glucan (OatWell®)

**ROLE:** Bioactive oat beta-glucan has been proven to reduce blood cholesterol levels, to reduce glycemic response and to promote gut health.

**EU HEALTH CLAIM:**

Art 14 : Oat beta-glucan lowers blood cholesterol levels. High cholesterol is a risk factor in the development of coronary heart disease.

Oat beta-glucan reduces the glycemic response.

Oat beta-glucan and insoluble fibers from oats promote gut health via the improvement of bowel function.

**US QUALIFIED HEALTH CLAIM:**

21 CFR 101.81: Soluble fiber from foods such as oat bran OatWell® beta Glucan, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease/ coronary heart disease.

A serving of OatWell® beta Glucan supplies 0.75 g/ RACC of the necessary 3 g/ day of beta glucan soluble fiber to have this effect

**FOOD SOURCES:** Oat. The beta glucans found in oats are soluble fibers that occur naturally in the grain. Oat beta-glucan (1-3 & 1-4 linked) constitutes the main component of the soluble dietary fiber content of oats. The process used to produce OatWell™ oat bran specifically maintains the functional attributes of the beta-glucan, namely the development of viscosity in the gut.

### Lactase (Tolerase™ L)

**ROLE:** 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 byproducts cause diarrhea, 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.

**EU HEALTH CLAIM:**

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

### Phytase (Tolerase™ P)

**ROLE:** Tolerase™ P is a micro granulated food enzyme preparation containing phytase. Whole grains, legumes and nuts contain phytate. Phytate inhibits absorption of minerals such as iron, zinc and calcium. Phytase can break apart phytate and make these minerals bioavailable. This is especially important for people not regularly consuming meat. Phytase works especially well at low pH making it particularly suitable to digest phytate in the stomach.

### Cytidine-5'-Monophosphate Free Acid

### Uridine-5'-Monophosphate Disodic

### Inosine-5'-Monophosphate Disodic

### Guanosine-5'-Monophosphate Disodic

### Adenosine-5'-Monophosphate Free Acid

**ROLE:** Nucleotides are vital constituents of all living cells. They play major roles in almost all physiological processes, in particular in cells/organs which replicate/proliferate rapidly, such as in growing tissue, in development and in repair. They are building blocks of deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) and have an important function in cellular energy and metabolism particularly as components of ATP and many coenzymes.

For Infant Nutrition, the major functional benefits for Nucleotides are:

- **Growth and development:** for the rapidly growing baby, Nucleotides are required for the production of new cells.
- **Helping immunity:** Contributes to protect the baby's delicate system from being attacked by viruses and bacteria. Helps to support higher antibody response to vaccinations.
- **Good gut function:** promotes the growth of 'good' bacteria which protect the gut against harmful bacteria.

**FOOD SOURCES:** Present in the whole food chain.

## Water-soluble vitamins

### Thiamin

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

**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.

**FOOD SOURCES:** Cereals, whole grains, pork, beef, lamb and poultry.

### 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.

**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.

**FOOD SOURCES:** Milk, green vegetables, meat, fish, whole grains, cheese and eggs.

### Niacin

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

**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.

**FOOD SOURCES:** Meat, fish, whole grains and wheat.

### Pantothenic Acid

**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.

**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.

**FOOD SOURCES:** Yeast, liver, kidney, eggs, peanut products, rice bran, and wheat bran.

### Vitamin B6

**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. B6, along with folate and B12, is essential to heart health.

**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.

**US QUALIFIED HEALTH CLAIMS:**

As part of a well-balanced diet that is low in saturated fat and cholesterol, Folic Acid, Vitamin B6 and Vitamin B12 may reduce the risk of vascular disease. FDA evaluated the above claim and found that, while it is known that diets low in saturated fat and cholesterol reduce the risk of heart disease and other vascular diseases, the evidence in support of the above claim is inconclusive.

**FOOD SOURCES:** Liver, salmon, walnuts, peanuts, wheat germ, bananas, grapes, carrots, peas, potatoes, beef, lamb and pork.

EU HEALTH CLAIMS were retrieved from the EU Register of nutrition and health claims made on foods: <http://ec.europa.eu/nuhclaims>

US QUALIFIED HEALTH CLAIMS were retrieved from the FDAs food labeling and nutrition register: <http://www.fda.gov/Food/LabelingNutrition/LabelClaims/QualifiedHealthClaims/ucm073992.htm>

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## Water-soluble vitamins *continued*

### Vitamin B12

**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.

**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

**US QUALIFIED HEALTH CLAIMS:**

As part of a well-balanced diet that is low in saturated fat and cholesterol, Folic Acid, Vitamin B6 and Vitamin B12 may reduce the risk of vascular disease. FDA evaluated the above claim and found that, while it is known that diets low in saturated fat and cholesterol reduce the risk of heart disease and other vascular diseases, the evidence in support of the above claim is inconclusive.

**FOOD SOURCES:** Kidney, liver, shellfish, sardines, salmon, herring and egg yolks.

### Folate

**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 anemia, 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.

**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.

**US QUALIFIED HEALTH CLAIMS:**

As part of a well-balanced diet that is low in saturated fat and cholesterol, Folic Acid, Vitamin B6 and Vitamin B12 may reduce the risk of vascular disease. FDA evaluated the above claim and found that, while it is known that diets low in saturated fat and cholesterol reduce the risk of heart disease and other vascular diseases, the evidence in support of the above claim is inconclusive.

0.8 mg folic acid in a dietary supplement is more effective in reducing the risk of neural tube defects than a lower amount in foods in common form. FDA does not endorse this claim. Public health authorities recommend that women consume 0.4 mg folic acid daily from fortified foods or dietary supplements or both to reduce the risk of neural tube defects.

**FOOD SOURCES:** Liver, beans, peanuts, almonds, green leafy vegetables, orange juice, strawberries, cantaloupe, whole wheat breads and cereals.

### Biotin

**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.

**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.

**FOOD SOURCES:** Yeast, liver, kidney and eggs.

### Vitamin C

**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.

**EU HEALTH CLAIMS:**

Vitamin C contributes to maintain the normal function of the immune system during and after intense physical exercise.  
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.

**US QUALIFIED HEALTH CLAIMS:**

Some scientific evidence suggests that consumption of antioxidant vitamins may reduce the risk of certain forms of cancer. However, FDA has determined that this evidence is limited and not conclusive.

Vitamin C and Gastric (Stomach) Cancer, "One weak study and one study with inconsistent results suggest that vitamin C supplements may reduce the risk of gastric cancer. Based on these studies, FDA concludes that it is highly uncertain that vitamin C supplements reduce the risk of gastric cancer."

**FOOD SOURCES:** Citrus fruits, potatoes, broccoli, sweet peppers, kale, cabbage, cauliflower, tomatoes, strawberries and acerola.

## Fat-soluble vitamins

### Vitamin A

**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.

**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.

**FOOD SOURCES:** Liver, kidney, eggs, milk, butter, margarine, fish and fish liver oil.

### Vitamin D3

**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.

**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.  
Vitamin D may reduce the risk of falling. Falling is a risk factor for bone fractures.

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

EU HEALTH CLAIMS were retrieved from the EU Register of nutrition and health claims made on foods: <http://ec.europa.eu/nuhclaims>

US QUALIFIED HEALTH CLAIMS were retrieved from the FDAs food labeling and nutrition register: <http://www.fda.gov/Food/LabelingNutrition/LabelClaims/QualifiedHealthClaims/ucm073992.htm>

## Fat-soluble vitamins *continued*

### Vitamin E

**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.

#### EU HEALTH CLAIM:

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

#### US QUALIFIED HEALTH CLAIMS:

Some scientific evidence suggests that consumption of antioxidant vitamins may reduce the risk of certain forms of cancer. However, FDA has determined that this evidence is limited and not conclusive.

Vitamin E and Bladder Cancer, "One small study suggests that vitamin E supplements may reduce the risk of bladder cancer. However, two small studies showed no reduction of risk. Based on these studies, FDA concludes that it is highly unlikely that vitamin E supplements reduce the risk of bladder cancer." Vitamin E and Colorectal Cancer, "Two weak studies and

one study with inconsistent results suggest that vitamin E supplements may reduce the risk of colorectal cancer. However, another limited study showed no reduction of risk. Based on these studies, FDA concludes that it is highly unlikely that vitamin E supplements reduce the risk of colorectal cancer."

Vitamin E and Renal Cancer, "One weak and limited study suggests that vitamin E supplements may reduce the risk of renal cell cancer. FDA concludes that it is highly uncertain that vitamin E supplements reduce the risk of renal cell cancer."

**FOOD SOURCES:** Nuts, seeds, oil fruits and vegetables.

### Vitamin K1

**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 long period. These people are frequently given vitamin K under a doctor's care. Vitamin K1 may help maintain bone health.

#### EU HEALTH CLAIMS:

Vitamin K contributes to normal blood clotting.

Vitamin K contributes to the maintenance of normal bones.

**FOOD SOURCES:** Green leafy vegetables, liver and soy beans, egg yolks, wheat, oats, potatoes, asparagus, butter and cheese.

## Nutritional lipids

### life'sDHA® (omega-3 oils)

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

#### EU HEALTH CLAIMS:

DHA contributes to maintenance of normal brain function.

DHA contributes to the maintenance of normal vision.

DHA maternal intake contributes to the normal brain development of the foetus and breastfed infants.

DHA intake contributes to the normal visual development of infants up to 12 months of age.

DHA contributes to the maintenance of normal blood triglyceride levels.

DHA and EPA contribute to the maintenance of normal blood pressure.

DHA and EPA contribute to the maintenance of normal blood triglyceride levels.

#### 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.

**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.

### life'sARA™ (omega-6 oils)

**ROLE:** ARA, 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.

#### EU HEALTH CLAIMS:

DHA contributes to maintenance of normal brain function.

DHA contributes to the maintenance of normal vision.

DHA maternal intake contributes to the normal brain development of the foetus and breastfed infants.

DHA intake contributes to the normal visual development of infants up to 12 months of age.

DHA contributes to the maintenance of normal blood triglyceride levels.

DHA and EPA contribute to the maintenance of normal blood pressure.

DHA and EPA contribute to the maintenance of normal blood triglyceride levels.

**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.

### MEG-3® and life'sOMEGA™ (omega-3 oils)

**ROLE:** 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. DHA has been shown, in some studies, to improve visual function in pre-term and term infants.

#### EU HEALTH CLAIMS:

DHA contributes to maintenance of normal brain function.

DHA contributes to the maintenance of normal vision.

DHA maternal intake contributes to the normal brain development of the foetus and breastfed infants.

DHA intake contributes to the normal visual development of infants up to 12 months of age.

DHA contributes to the maintenance of normal blood triglyceride levels.

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.

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

### life'sGLA™ (omega-6 oils)

**ROLE:** 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:** Plants (Evening Primrose and Borage) and dietary supplements. Canadian data suggest 3.3 gm/100 kcals or at least 3% of energy.

# Labeling and compendia / certification

## Labeling

In general, vitamins, carotenoids and other nutraceuticals are relatively sensitive products, and the storage stability is influenced by many factors. For this reason, indications of the relevant storage conditions are given on the labels of most of the products.

## Compendia/Certification

Our material complies, when stated in the Product Data Sheet, with the appropriate monographs of the below mentioned compendia. It is the responsibility of the manufacturing company to ensure that the final product is manufactured according to current local regulations and standards.

### USP

United States Pharmacopoeia (current edition) including National Formulary (current edition) and supplements.

### FCC

Food Chemicals Codex (current edition) and supplements.

### Ph. Eur.

European Pharmacopoeia (current edition) and supplements.

### JECFA

Codex Alimentarius Standard.

Joint FAO/WHO Expert Committee on Food Additives (JECFA).

### CEP

The role of the Certificate of Suitability (CEP) is to demonstrate that the purity of a given substance produced by a specific manufacturer is suitably controlled and in compliance with the relevant monograph(s) of the European Pharmacopoeia. It is granted by the European Directorate for the Quality of Medicines (EDQM).

CEPs have been granted for the following products:

β-Carotene	(Pro-Vitamin A)
dl-α-Tocopheryl acetate	(Vitamin E)
d-α-Tocopheryl acetate	(Natural Source Vitamin E)
Ascorbic acid	(Vitamin C)
Ascorbyl palmitate	(Vitamin C palmitate)
Biotin	(Vitamin H, Vitamin B7)
Calcium ascorbate	(Vitamin C)
Calcium D-Pantothenate	(Calpan/Vitamin B5)
Cholecalciferol	(Vitamin D3)
Cyanocobalamin	(Vitamin B12)
Dexpantenol	(Panthenol, Vitamin B5)
Dextromethorphan hydrobromide	
Folic acid	(Vitamin B9)
Niacinamide	(Vitamin B3)
Phytomenadione	(Vitamin K1)
Pyridoxine hydrochloride	(Vitamin B6)
Riboflavin Fermentation process	(Vitamin B2)
Riboflavin sodium phosphate	(Vitamin B2)
Sodium ascorbate	(Vitamin C)
Thiamine hydrochloride	(Vitamin B1)
Thiamine mononitrate	(Vitamin B1)
Vitamin A palmitate	(Vitamin A)
Vitamin A acetate	(Vitamin A)

### FDA

Drug Master Files (DMF) have been filed for the following products:

Dextromethorphan hydrobromide

Vitamin D3 Cryst

BONISTEIN® (Genistein)

### Kosher and Halal certification

The following certifications are considered:

OU Kosher Kashruth Division of the Orthodox Union (Union of Orthodox Jewish Congregation of America). Products certified as:

- Kosher Pareve/Parve or
- Kosher Pareve/Parve Kosher for Passover or
- Kosher Pareve/Parve and Kosher Fish or
- Kosher Dairy.

BK Products certified by Basdatz Kashruth Basle, as:---

- Kosher for Passover, Pareve/Parve or
- Kosher for Passover – Kitniot or
- Kosher Pareve/Parve, Not for Passover use

Kosher Ko Orthodox Kashrut Service Group (USA)

Kosher Star-K Certification (USA)

Halal-Ifanca – The Islamic Food and Nutrition Council of America

Halal-HFCE – Halal Food Council Europe

Halal- MUI – Majelis Ulama Indonesia

Information concerning Kosher and Halal certification is available on request.

### Specific Product Information

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

Some of the listed products are used either as vitamins (nutrients) or as food additives for technological purposes; some of them serve both purposes. As food additive they are permitted in most countries. However, there are special local regulations according to which the use of food additives is restricted. It is therefore advisable to consult the corresponding food regulation.

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

# DSM and responsibility



## DSM in partnership with the World Food Programme

In March 2007 DSM announced an official partnership with the United Nation's World Food Programme (WFP). WFP is the largest provider of food aid to the world's hungry. They feed and nourish an average of 90 million people in over 80 countries each year.

The WFP – DSM partnership program, 'Improving Nutrition – Improving Lives' is a commitment to fight hunger and malnutrition around the world. DSM provides technical and scientific expertise and high nutrient products as well as financial assistance to improve the WFP food basket through the addition of essential micronutrients. Together, DSM and WFP make a difference to millions of people. Improving nutrition means fighting 'hidden hunger', improving lives, breaking the vicious circle of poverty and hunger. This is a major contribution to unleashing potential in countries and their economies.

*For more information, please visit [www.wfp.org](http://www.wfp.org)*



## Sight and Life™

### *Building bridges for better nutrition*

Sight and Life™ is a humanitarian nutrition think tank of DSM. We believe that the right mix of funding, knowledge, technology and policy will lead to better health for the world's most vulnerable populations, and we use advocacy and leadership to address societal changes affecting dietary quality. We disseminate information that reflects evolving scientific evidence, aiming to promote partnerships that can solve pressing problems. We believe that the scourge of malnutrition should be addressed in an integrated and holistic manner.

*For more information, please visit [www.sightandlife.org](http://www.sightandlife.org)*

## Nutrition Improvement Program

### **Nutrition Improvement Program**

#### *Unlocking human potential*

DSM's Nutrition Improvement Program (NIP) aspires to be your partner of choice in the global fight against hidden hunger. We offer nutritious, safe and affordable solutions tailored to the needs of local communities in the developing world, with a special focus on women and children. NIP responds to the challenges of improving nutrition in three ways: 1. We develop products for specific target groups and needs; 2. We support staple food fortification programs; 3. We develop new sustainable and inclusive business models.

*For more information, please visit [www.nutritionimprovement.com](http://www.nutritionimprovement.com)*



### **Dow Jones World Sustainability World Index**

DSM was again among the leaders in the chemical industry sector in the Dow Jones Sustainability World Index in 2012. Since 2004 DSM has held the worldwide sustainability leader position in the chemicals sector six times. In the other three years, the company ranked among the top leaders in the sector.