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

<table>
<thead>
<tr>
<th>Product and Description</th>
<th>Certifications</th>
<th>Pack Size (kg)</th>
<th>Product code</th>
<th>Main Application</th>
<th>Specific Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>CaroCare® Nat. β-Carotene 1% CWS/M</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>5, 20</td>
<td>50 1212 0.304 50 1212 0.341</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow</td>
</tr>
<tr>
<td>CaroCare® Nat. β-Carotene 10% CWS Star Beadlet††, cold water dispersible. Starch-based</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>5, 20</td>
<td>50 1093 4.341</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Orange</td>
</tr>
<tr>
<td>CaroCare® Nat. β-Carotene 10% CWS/S Spray-granulated powder, cold water dispersible. Starch-based</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>10</td>
<td>50 1484 2.141</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow-Orange to Orange</td>
</tr>
<tr>
<td>CaroCare® Nat. β-Carotene 20% CWS/S-TG Spray-granulated powder, cold water dispersible. Starch-based</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>10</td>
<td>50 1484 4.541</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow-Orange to Orange</td>
</tr>
<tr>
<td>CaroCare® Nat. β-Carotene 30% S Fluid suspension</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>5</td>
<td>50 1480 8.302</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow</td>
</tr>
<tr>
<td>CaroCare® Nat. β-Carotene 30% OS Fluid suspension</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>5</td>
<td>50 1401 4.302</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Product and Description</th>
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<th>Pack Size (kg)</th>
<th>Product code</th>
<th>Main Application</th>
<th>Specific Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>β-Carotene Crystalline Ph</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>0.25</td>
<td>50 1434 4.258</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow</td>
</tr>
<tr>
<td>β-Carotene 1% CWS/M</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>5, 25</td>
<td>50 1628 0.304 50 1628 0.368</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow</td>
</tr>
<tr>
<td>β-Carotene 3% CWS/M</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>5</td>
<td>50 0363 6.304</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow</td>
</tr>
<tr>
<td>β-Carotene 7% CWS</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>10</td>
<td>04 8282 5.231</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow-Orange</td>
</tr>
<tr>
<td>β-Carotene 10% CWS Beadlet††, cold water dispersible</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>1, 5, 25</td>
<td>04 3482 5.268 04 3482 5.304 04 3482 5.368</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow-Orange to Orange</td>
</tr>
<tr>
<td>β-Carotene 10% CWS/S Spray-granulated powder, cold water dispersible. Starch-based</td>
<td>Non-GMO, Kosher, Halal, DMF*</td>
<td>5</td>
<td>50 1576 7.304 (Origin: Spain)</td>
<td>Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>Naturally Sourced, Vegetarian, Coloration: Yellow-Orange to Orange</td>
</tr>
</tbody>
</table>

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

**ROLE:**

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

**FOOD SOURCES:**

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

**HEALTH BENEFITS & SOLUTIONS:**

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

**EU HEALTH CLAIMS:**

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

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### BetaTab® 20% S

- Beadlet®, tablet grade, Starch-based
- Form: Powder, cold water dispersible
- Main Application Specific Application: Dietary Supplements, Foods and Beverages
- Specific Application: Early Life Nutrition, Medical Nutrition, Nutrition Improvement
- Naturally Sourced: Vegetarian, Coloration: Low color saturation

### BetaTab® 20% S Ph

- API with specific service package for pharma registered applications, Beadlet®, cold water dispersible
- Form: Powder, cold water dispersible
- Main Application Specific Application: Dietary Supplements, Foods and Beverages
- Specific Application: Early Life Nutrition, Medical Nutrition, Nutrition Improvement
- Naturally Sourced: Vegetarian, Coloration: Yellow

### β-Carotene 15% LCS

- Powder, cold water dispersible
- Form: Liquid emulsion
- Main Application Specific Application: Dietary Supplements, Foods and Beverages
- Specific Application: Early Life Nutrition, Medical Nutrition, Nutrition Improvement
- Naturally Sourced: Vegetarian, Coloration: Red

### β-Carotene 10% Emulsion Red

- Liquid emulsion
- Form: Liquid emulsion
- Main Application Specific Application: Dietary Supplements, Foods and Beverages
- Specific Application: Early Life Nutrition, Medical Nutrition, Nutrition Improvement
- Naturally Sourced: Vegetarian, Coloration: Yellow

### β-Carotene 5% EM K

- Liquid emulsion
- Form: Liquid emulsion
- Main Application Specific Application: Dietary Supplements, Foods and Beverages
- Specific Application: Early Life Nutrition, Medical Nutrition, Nutrition Improvement
- Naturally Sourced: Vegetarian, Coloration: Yellow

### β-Carotene 2.5% Emulsion CC

- Liquid emulsion
- Form: Liquid emulsion
- Main Application Specific Application: Dietary Supplements, Foods and Beverages
- Specific Application: Early Life Nutrition, Medical Nutrition, Nutrition Improvement
- Naturally Sourced: Vegetarian, Coloration: Yellow

### β-Carotene 30% FS

- Fluid suspension
- Form: Fluid suspension
- Main Application Specific Application: Dietary Supplements, Foods and Beverages
- Specific Application: Early Life Nutrition, Medical Nutrition, Nutrition Improvement
- Naturally Sourced: Vegetarian, Coloration: Yellow

### β-Carotene 30% FS Ph

- Fluid suspension, heat stable
- Form: Fluid suspension
- Main Application Specific Application: Dietary Supplements, Foods and Beverages
- Specific Application: Early Life Nutrition, Medical Nutrition, Nutrition Improvement
- Naturally Sourced: Vegetarian, Coloration: Yellow

### β-Carotene 22% HSS

- Fluid suspension, heat stable
- Form: Fluid suspension
- Main Application Specific Application: Dietary Supplements, Foods and Beverages
- Specific Application: Early Life Nutrition, Medical Nutrition, Nutrition Improvement
- Naturally Sourced: Vegetarian, Coloration: Yellow

<sup>††</sup> Product formulations which utilise Actilease® beadlet technology. Actilease® combines easy handling, bioavailability, and stability of the active.
### Apocarotenal (8’-apo-β-Carotenal)

<table>
<thead>
<tr>
<th>Product and Description</th>
<th>Certifications</th>
<th>Form</th>
<th>Main Application Specific Application</th>
<th>Specific Application</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kosher</td>
<td>Halal</td>
<td>DMF</td>
<td>CEP</td>
</tr>
<tr>
<td>Apocarotenol 1% CWS/M Powder, cold water dispersible. Based on medium chain triglycerides</td>
<td>5</td>
<td>25</td>
<td>50 0631 7.304</td>
<td>50 0631 7.368</td>
</tr>
<tr>
<td>Apocarotenol 10% W5/N Beadlet††</td>
<td>1</td>
<td>04 873 6.268</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Apocarotenol 20% 5 Fluid suspension</td>
<td>1</td>
<td>5</td>
<td>04 8227 7.266</td>
<td>04 8227 7.211</td>
</tr>
<tr>
<td>Carotenol Solution #2 2% 8’-apo-β-Carotenal</td>
<td>20</td>
<td>20</td>
<td>04 8227 7.213 (Origin: France)</td>
<td>04 8227 7.199 (Origin: USA)</td>
</tr>
<tr>
<td>Carotenol Solution #73 1.4% 8’-Apo-β-carotenol and 0.6% β-Carotene solution (70:30 ratio)</td>
<td>20</td>
<td>20</td>
<td>04 805 4 3.113 (Origin: France)</td>
<td>04 805 4 1.199</td>
</tr>
</tbody>
</table>

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

**ADDITIONAL INFORMATION | Apocarotenal**

**ROLE:**
Apocarotenol may be used in some regions for its coloring properties.

**FOOD SOURCES:**
Citrus fruits and green vegetables such as oranges or spinach.
Astasana™ / Astaxanthin

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

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

HEALTH BENEFITS & SOLUTIONS:
Optimize your immunity, Enhance your mobility, Upgrade your vision.

Canthaxanthin

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

FOOD SOURCES:
Green algae, crustaceans, and bioaccumulates in fish.
**FloraGLO® / Lutein – Naturally sourced**

<table>
<thead>
<tr>
<th>Product and Description</th>
<th>Certifications</th>
<th>Pack Size (g)</th>
<th>Product Code</th>
<th>Form</th>
<th>Main Application</th>
<th>Specific Application</th>
<th>Role</th>
<th>Food Sources</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>FloraGLO® Lutein 1% SD/S Powder, cold water dispersible. Starch-based</td>
<td>Kosher</td>
<td>20</td>
<td>50 1514 9.341</td>
<td>Liquid</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Lutein and Zeaxanthin are natural yellow pigments found in cellular membranes, which cannot be produced by the body, but rather must be absorbed from the diet. These carotenoids absorb blue light and act as free radical scavengers in vitro. Lutein and Zeaxanthin are naturally found in maternal placenta and cord blood, as well as in colostrum and breast milk; they are structural components of the human eye and brain.</td>
<td>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.</td>
</tr>
<tr>
<td>FloraGLO® Lutein 5% CWS/S-TG Beadlet, tablet grade and cold water dispersible. Starch-based</td>
<td>Kosher</td>
<td>5</td>
<td>50 1206 6.304</td>
<td>Powder</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Essential for early life, Essentials for kids &amp; teens.</td>
<td></td>
</tr>
<tr>
<td>FloraGLO® Lutein 10% CWS/S-TG Beadlet, tablet grade and cold water dispersible. Starch-based</td>
<td>Kosher</td>
<td>5</td>
<td>50 1186 8.304</td>
<td>Powder</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FloraGLO® Lutein 10% SG-VG Spray-granulated powder, tablet grade and cold water dispersible. Starch-based</td>
<td>Kosher</td>
<td>5</td>
<td>50 1595 3.304</td>
<td>Powder</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FloraGLO® Lutein 20% SAF Fluid suspension in safflower oil</td>
<td>Kosher</td>
<td>1</td>
<td>50 1187 6.264</td>
<td>Powder</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FloraGLO® OPTISHARP® 5:3 24% FS Fluid suspension, with a lutein/zeaxanthin ratio of 5:1</td>
<td>Kosher</td>
<td>5</td>
<td>50 1589 6.294</td>
<td>Powder</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ADDITIONAL INFORMATION | Lutein (FloraGLO®)

**ROLE:**

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

**FOOD SOURCES:**

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

**HEALTH BENEFITS & SOLUTIONS:**

Empower your mind, Upgrade your vision, Essentials for early life, Essentials for kids & teens.
**PRODUCT AND DESCRIPTION**

<table>
<thead>
<tr>
<th>Product and Description</th>
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<th>Pack Size (g)</th>
<th>Product Code</th>
<th>Form</th>
<th>Main Application</th>
<th>Specific Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Redivivo® (Lycopene) 10% CWS/S-TG</strong></td>
<td>Kosher</td>
<td>5</td>
<td>S0 0379 2.304</td>
<td>Powder</td>
<td>Pharma Reg. OTC/Rx</td>
<td>Naturally Sourced</td>
</tr>
<tr>
<td><strong>Redivivo® (Lycopene) 10% FS</strong></td>
<td>Halal</td>
<td>5</td>
<td>S0 0020 3.294</td>
<td>Powder</td>
<td>Dietary Supplements</td>
<td>Vegetarian</td>
</tr>
<tr>
<td><strong>Redivivo® 10% CWS/S-TG</strong></td>
<td>DMF*, CEP</td>
<td>5</td>
<td>S0 1598 1.304, S0 0379 2.304 (Origin: Switzerland), S0 0379 2.358 (Origin: Switzerland)</td>
<td>Powder</td>
<td>Foods, Nutritional Formulations &amp; Beverages</td>
<td>Vegetarian, Coloration: Orange-Red to Red</td>
</tr>
</tbody>
</table>

**ADDITIONAL INFORMATION | Lycopene (Redivivo®)**

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

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

**HEALTH BENEFITS & SOLUTIONS:**
Guard your heart, Essentials for men, Essentials for healthy aging, Essentials for life, Nourish your beauty.
OPTISHARP® / Zeaxanthin – Naturally sourced

<table>
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<th>Pack size (g)</th>
<th>Specific application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPTISHARP® Natural (Zeaxanthin) 5% CWS/S-TG</strong> Spray granulated powder, cold water dispersible. Starch-based</td>
<td>KOSHER, HALAL, DMF*</td>
<td>10</td>
<td>Liquid, Powder, Pharma Rx, Dietary Supplements, Foods and Beverages, Early Life Nutrition, Medical Nutrition, Nutrition Improvement, Naturally Sourced, Vegetarian, Coloration</td>
</tr>
<tr>
<td><strong>OPTISHARP® Natural (Zeaxanthin) 14% Safflower Oil</strong> Fluid suspension</td>
<td>KOSHER, HALAL, DMF*</td>
<td>1</td>
<td>Liquid, Powder, Pharma Rx, Dietary Supplements, Foods and Beverages, Early Life Nutrition, Medical Nutrition, Nutrition Improvement, Naturally Sourced, Vegetarian, Coloration</td>
</tr>
</tbody>
</table>

**ADDITIONAL INFORMATION | Zeaxanthin (OPTISHARP®)**

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

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

**HEALTH BENEFITS & SOLUTIONS:**
Empower your mind, Upgrade your vision, Essentials for early life, Essentials for kids & teens.
**ADDITIONAL INFORMATION | Labeling**

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

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

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

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

**RSPO CERTIFICATION**
DSM made a commitment in 2013 to source all palm oil and palm oil derivatives in a sustainable manner by either using GreenPalm certificates under “Book & Claim” scheme or Mass Balance certification.
With our broad service offerings, customers get an integrated partner, from concept to consumer.

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

**CUSTOMIZED SOLUTIONS**
- Coloration solutions
- Market-ready solutions
- Personalized nutrition solutions
- Premix solutions
- Shelf-life solutions

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

Our products can make yours stronger. Learn how at DSM-Products.com.

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