

YOUR END-TO-END PARTNER

PRODUCTS CUSTOMIZED SOLUTIONS EXPERT SERVICES

PRODUCTS WITH PURPOSE

Fat-soluble vitamins

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

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

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

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



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

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

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

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



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

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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

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

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

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

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

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

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

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



ADDITIONAL INFORMATION | Vitamin D3 (Cholecalciferol)

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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



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

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

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

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

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

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



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

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

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

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



Quali®-E / Mixed Tocopherols – Naturally sourced

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

ADDITIONAL INFORMATION | Vitamin E (Tocopherols)

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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



Quali®-K / Vitamin K1 (Phylloquinone)

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

*US DMF only.

ADDITIONAL INFORMATION | Vitamin K1 (Phylloquinone)

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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

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



YOUR END-TO-END PARTNER

PRODUCTS | CUSTOMIZED SOLUTIONS | EXPERT SERVICES

PRODUCTS WITH PURPOSE

Water-soluble vitamins

Quali®-B / Vitamin B1 (Thiamine)

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

**Only for North America.

ADDITIONAL INFORMATION | Vitamin B1 (Thiamine)

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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

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



Quali®-B / Vitamin B2 (Riboflavin)

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

**Only for North America.

ADDITIONAL INFORMATION | Vitamin B2 (Riboflavin)

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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



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

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

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

ADDITIONAL INFORMATION | Vitamin B3 (Niacin /Niacinamide)

ROLE:

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

FOOD SOURCES:

Meat, fish, whole grains, wheat and legumes.

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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



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

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

ADDITIONAL INFORMATION | Vitamin B5 (Panthenol, Pantothenate)

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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

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



Quali®-B / Vitamin B6 (Pyridoxine)

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

**Only for North America.

ADDITIONAL INFORMATION | Vitamin B6 (Pyridoxine)

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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



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

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

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

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

ROLE:

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

FOOD SOURCES:

Yeast, liver, eggs, beef and pork.

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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



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

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

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

ADDITIONAL INFORMATION | Vitamin B9 (Folate, Folic Acid)

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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



Quali®-B / Vitamin B12 (Cyanocobalamin)

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

ADDITIONAL INFORMATION | Vitamin B12 (Cyanocobalamin)

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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



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

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

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

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



Vitamin C (L-Ascorbic Acid, Ascorbate)

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

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



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

ROLE:

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

FOOD SOURCES:

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

HEALTH BENEFITS & SOLUTIONS:

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

EU HEALTH CLAIMS:

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



ADDITIONAL INFORMATION | Labeling

KOSHER AND HALAL CERTIFICATION

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

SPECIFIC PRODUCT INFORMATION

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

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

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

RSPO CERTIFICATION

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

YOUR END-TO-END PARTNER

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

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

PRODUCTS

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

CUSTOMIZED SOLUTIONS

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

EXPERT SERVICES

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

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

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