

MenaQ7[®]

NATURAL VITAMIN K2 AS MK-7

Vitamin K2 For Brands That Aspire For More



**Your Handbook for Natural,
Pure and European-Produced Vitamin K2**



Gnosis
by Lesaffre

Why is Vitamin K2
Crucial for Health?

1

Who is Looking
for Vitamin K2 and Why?

2

The Most Clinically
Studied Vitamin K2

3

European Quality:
Natural Fermentation for
Pure all-*trans* 99.8% K2 as MK7

4

MenaQ7[®] for Brands
that Care for the Planet

5

MenaQ7[®] Portfolio Versatility
for Product Diversity

6

K2



MenaQ7®

Branded, clinically proven, and versatile Vitamin K2 to incorporate into a wide range of finished products, providing a reliable marketing story for brand confidence

Magnifying Glass

The most science-supported Vitamin K2 confirming true health benefits, backed up by over 22 human clinical trials

MenaQ7®
NATURAL VITAMIN K2 AS MK-7

Natural

Using the power of microorganisms through fermentation to mimic Vitamin K2 as found in nature

Vitamin K2 as MK-7

The optimal Vitamin K2 molecule form in terms of absorption, accumulation in the serum, and efficacy

Why is Vitamin K2 Crucial for Health?

VITAMIN K2 OVERVIEW



Vitamin K2 Absorption



Vitamin K2 is an **essential fat-soluble** vitamin



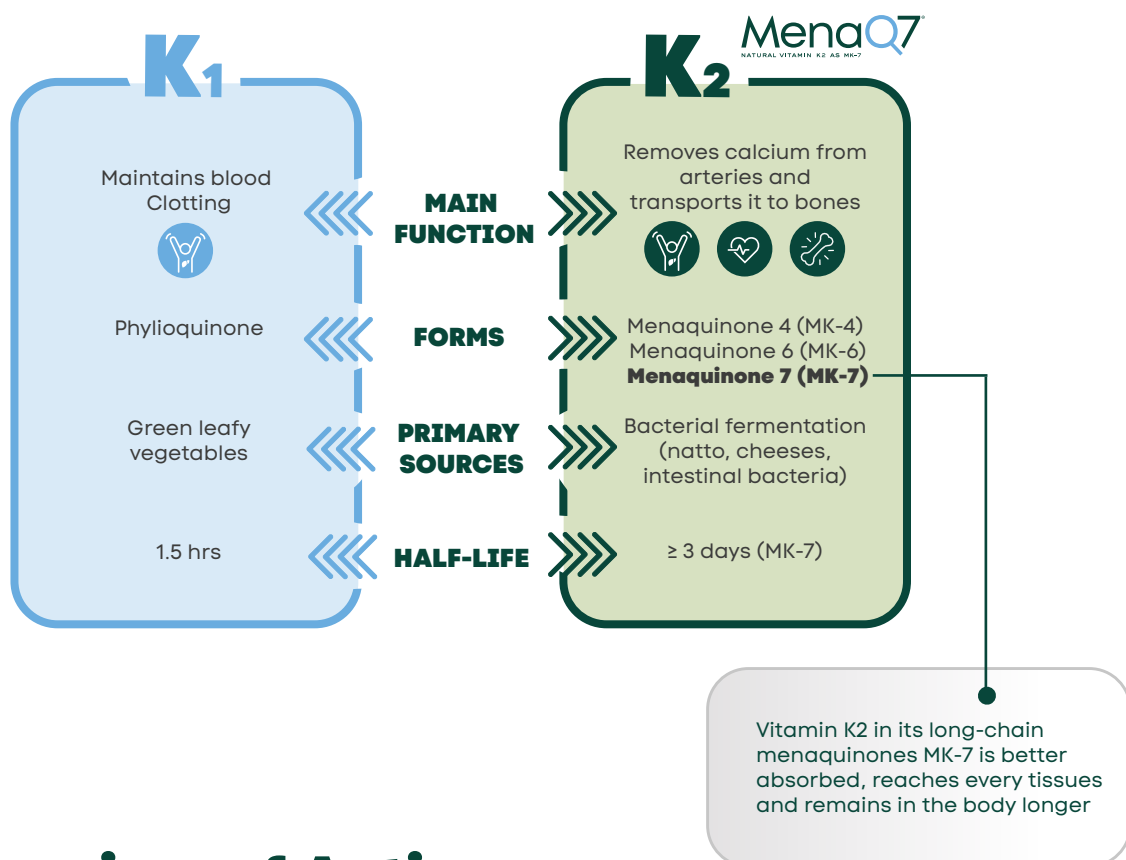
Vitamin K2 as MK-7 remains available for biodistribution in the body for **72h**



Compared to vitamin K1, **K2 performs** more functions and has higher efficiency and bioavailability



Effective with a **smaller** and less frequent **dose**



Mechanism of Action

Through its central role in managing calcium in the body, **Vitamin K2** is essential for forming a solid bone matrix and a healthy cardiovascular system via the activation of the **Vitamin K-dependent proteins**.

When the body has sufficient **Vitamin K2**, calcium is directed to where it is needed and kept away from where it is not. Emerging science also highlights the role of **Vitamin K2** for other benefits, including inhibiting inflammation and oxidative stress and boosting ATP production.

● OSTEOCALCIN

Protein responsible for binding calcium ions to the bone mineral matrix

● MATRIX GLA PROTEIN

Most potent inhibitor of arterial calcification

VITAMIN K2 (menaquinones)



Vitamin K2 Deficiency

While vitamin K1 is found in green leafy vegetables, such as spinach and kale, Vitamin K2 is mainly of bacterial origin and much more challenging to obtain through diet.

- A typical Western diet contains insufficient amounts of Vitamin K2
- 97% of Western populations are Vitamin K deficient
- Studies show that children and adults >40yo have higher needs
- The minimum daily recommended dosage for children is 45 mcg and 90 to 180 mcg for adults



Beef **4 kg**

Milk **5 L**

Egg Yolk
140 g

Soft Cheese
80 g

Hard Cheese
59 g

Whole Yoghurt
5 L

Even a small 45 mcg daily dose of **Vitamin K2** is challenging to obtain through diet alone.

Who is Looking for Vitamin K2 and Why?

MENAQ7® FOR ALL STAGES OF LIFE



MenaQ7
NATURAL VITAMIN K2 AS MK-7

Children



BONE HEALTH

Bones grow intensively, requiring a high K2 level



ANTIBIOTIC

Children under antibiotics might have lower vitamin K status



DENTAL HEALTH

K2 may assist in significantly reducing dental caries

Research demonstrates that children are deficient in the essential nutrient **Vitamin K2**.

Daily **MenaQ7®** supplementation promotes strong skeletal development and children's overall health.

Sport Performance



BONE HEALTH

Bone density, which peaks around age 30, can be preserved with K2



CARDIOVASCULAR HEALTH

K2 has been shown to increase ATP production and enhance cardiac output



COGNITION HEALTH

K2 is linked to supporting brain function and cognitive well-being

Active Lifestylers aim to support their overall health in a "holistic wellness" approach, including bone, joint, heart, and brain health.

MenaQ7® might benefit people in their most active life moments.

Menopausal Women



CARDIOVASCULAR HEALTH

Cardiovascular issues are a major cause of death in women over the age of 65



BONE HEALTH

At menopause, hormone changes cause a decline in bone mass increasing fracture risks

A woman's health needs change throughout life, especially with hormone fluctuations.

MenaQ7® daily supplementation helps maintain cardiovascular and bone health, critical to supporting vitality.

Healthy Aging



CARDIOVASCULAR HEALTH

K2 helps inhibit age-related arterial calcification, providing foundational heart support



BONE HEALTH

Adequate K2 can help slow the bone loss that occurs naturally as we age



COGNITION HEALTH

Brain processing speed slows with age, but can be impacted by K2's cardiovascular mechanism



ANTIOXIDANT & IMMUNITY

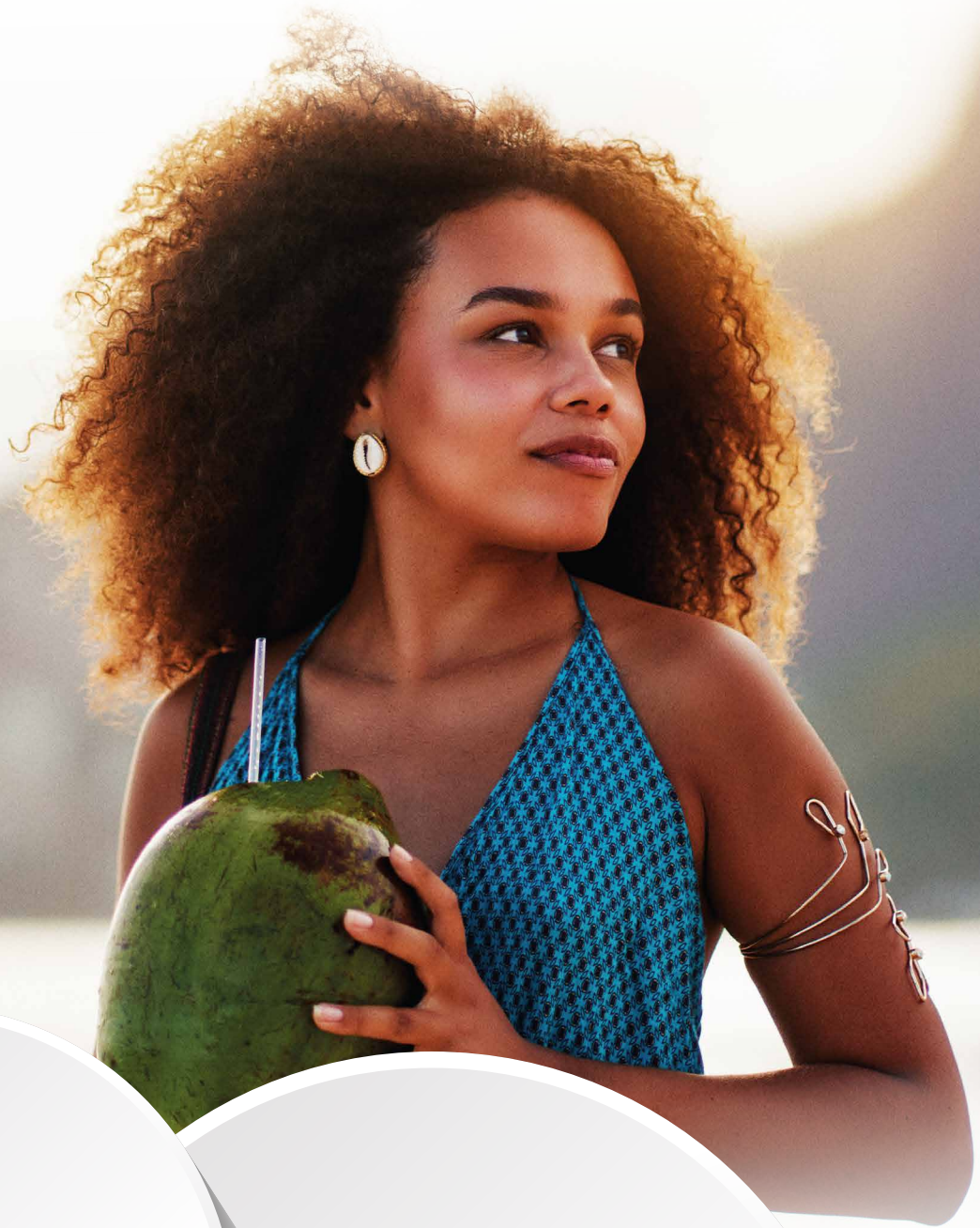
K2 can help reduce inflammation and oxidative stress

By 2050, the world's population of people aged 60 years or more will double, making population aging a defining global trend.

MenaQ7® could provide critical support for those aiming to live fulfilling lives for longer.

The Most Clinically Studied Vitamin K2

GET YOUR SCIENCE FROM THE SOURCE



3

MenaQ7[®]
NATURAL VITAMIN K2 AS MK-7

Beyond Heart and Bone Health

MenaQ7® was the source material for more than 22 human clinical trials (with more underway). This research shaped the basis for our current understanding of **Vitamin K2** benefits on different populations.



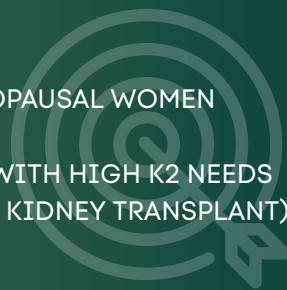
HEART HEALTH

MenaQ7® activates MGP, the strongest inhibitor of vascular calcification

MenaQ7® improves arterial elasticity

- POSTMENOPAUSAL WOMEN
- ADULTS
- PATIENTS WITH HIGH K2 NEEDS (DIALYSIS, KIDNEY TRANSPLANT)

13, 14



BONE HEALTH

MenaQ7® improves bone mineral content and density, and bone strength

MenaQ7® increases circulating concentrations of Vitamin K2 as MK-7 and active osteocalcin

MenaQ7® and vitamin D have a positive effect on the bone mineral density of children

- CHILDREN
- POSTMENOPAUSAL WOMEN
- ADULTS

4, 5, 15



ONGOING STUDIES AND BEYOND



MenaQ7® reduces oxidative stress in human muscle cells

MenaQ7® can inhibit TNF, and thus has an anti-inflammatory effect

MenaQ7® is being evaluated for its impact on decreasing the frequency of migraine attacks

- ADULTS

12, 16, 17



SUGGESTED DAILY DOSAGE

Children: 45mcg

Adults: 90 mcg to 180mcg

180mcg is the nutritional dose used in the **MenaQ7®** 3-year clinical trials showing bone and heart support; there is no current RDI for K2.



MenaQ7® allows for 2 EFSA claims:

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



Based on strong clinical studies, **MenaQ7®** Vitamin K2 as MK-7 may be promoted in the United States with specific structure-function claims*

European Quality: Natural Fermentation for Pure *all-trans* 99.8% K2 as MK7

EUROPE'S SOLE PRODUCER OF NATURAL
VITAMIN K2

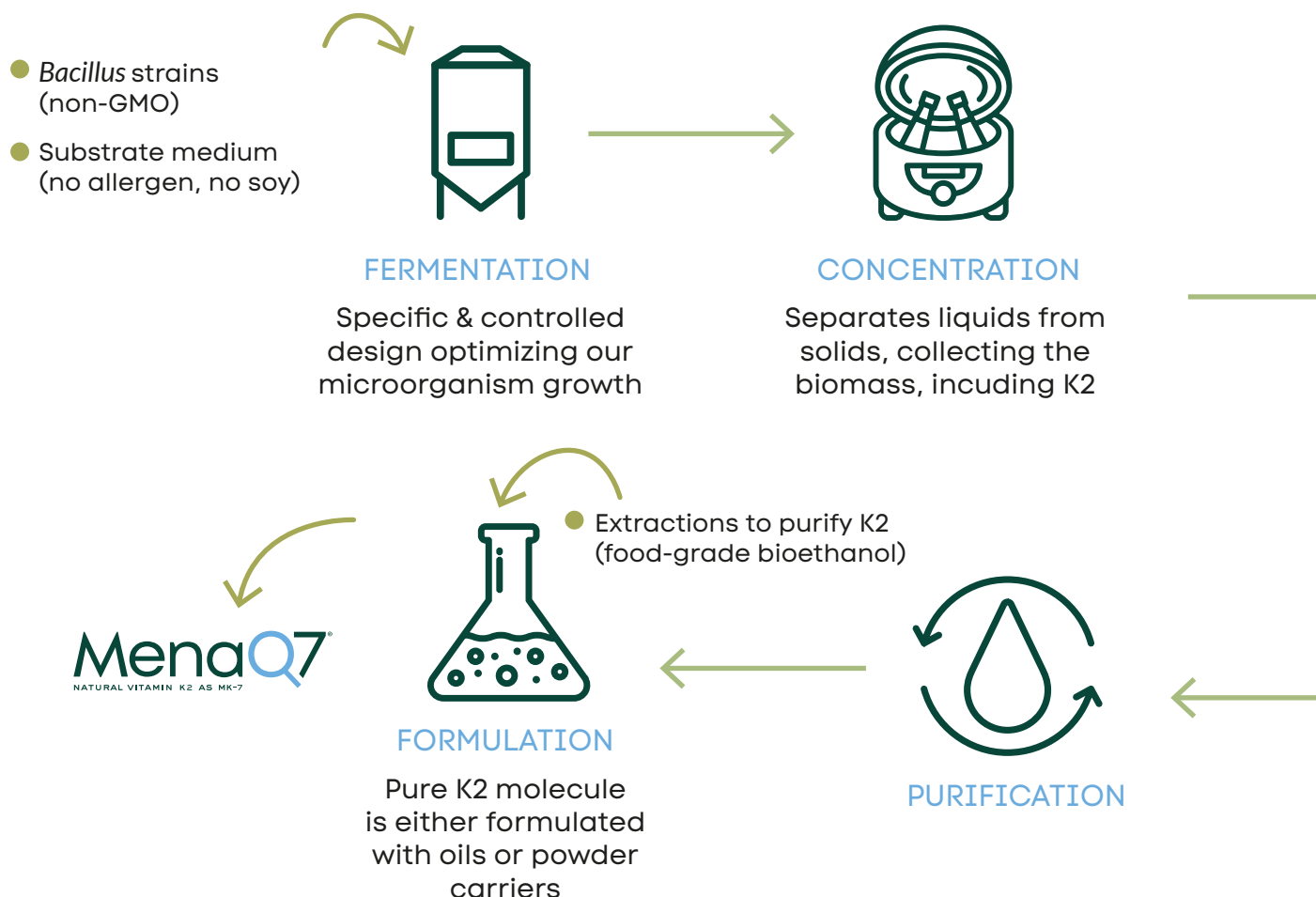
4

MenaQ7[®]
NATURAL VITAMIN K2 AS MK-7

Natural fermentation

Fermentation occurs in nature and involves microorganisms

- Only **Vitamin K2** from fermentation can be promoted to consumers as being from natural origins
- Synthetic processes involve chemicals & so more purification steps are required to obtain all-trans K2



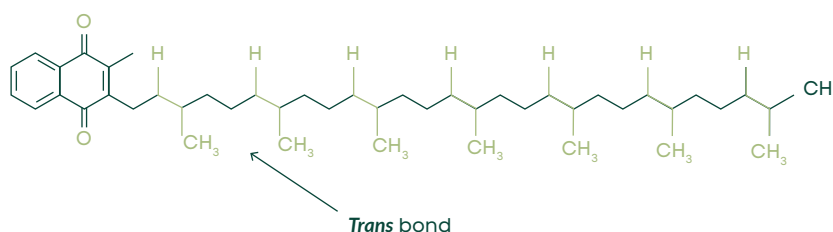
Purest K2 Molecule*

MenaQ7® is a Vitamin K2 of general purity exceeding 97%. The natural residues >3% comprise markers from the fermentation, such as Vitamin K2 as MK-6 and saccharides from the microorganism.

MenaQ7® isomeric purity is 99.8% all-trans K2 as MK-7, the bioactive form naturally produced by bacteria and conferring its biological activity.

TRANS form of MK7

Bioactive, natural



Clean Ingredient

Short list of ingredients
No unknown residues
Natural K2 source

* General and isomeric purities are analyzed at each batch

MenaQ7® for Brands that Care for the Planet

SUSTAINABILITY COMMITMENTS

5

MenaQ7®
NATURAL VITAMIN K2 AS MK-7

MenaQ7® is manufactured in our European GMP-certified, complying with **ISO 14001** and **ISO 45001**.

We measured and identified which process steps could be improved regarding energy consumption. We continue investing in sustainable measures to reduce our environmental impact.

ISO 14001

We implemented an **Environmental Management System** to identify and control the environmental impact of our activities.

ISO 45001

We implemented the **Occupational Health and Safety Management System** standard to continuously improve the health and safety of our employees.

CO2 & Energy Reduction

We invest in different systems to reduce our **carbon footprint**, including recovering condensates, reducing purge water, and an expected **electricity reduction of 5% in 2024**.

Water Reduction

In 2024, we will run a project allowing control of the water used for cooling steam condensate, targeting a **20% water reduction**. We already reuse a certain amount of wastewater to **limit freshwater use**.

Waste Management

We put in place procedures allowing us to **reduce our waste**, providing pre-treated wastes by distillation to be used as **secondary raw material** by external manufacturing sites.

MenaQ7®
NATURAL VITAMIN K2 AS MK-7

MenaQ7® Portfolio Versatility for Product Diversity

MENAQ7® SOLUTIONS PLATFORM



6

MenaQ7®
NATURAL VITAMIN K2 AS MK-7



DOWNLOAD
THE BROCHURE

MenaQ7[®] Matrix
NATURAL VITAMIN K2 AS MK-7

The Natural Choice for Stable
and Protected Vitamin K2

**Clean, Encapsulation-Free
Technology**



**MenaQ7[®]
Matrix**



**MenaQ7[®]
MCC**



**MenaQ7[®]
Palm-Free Oil**
**MenaQ7[®]
Sunflower Oil**

Your delivery system and formulation

Our Portfolio Solutions

Your delivery system and formulation		Our Portfolio Solutions		
TABLETS	Simple Formulation			
	Combination with Minerals			
HARD CAPSULES	Simple Formulation			
	Combination with Minerals			
READY-TO-DRINK POWDER	Dairy Powder			
	Protein Powder			
GUMMIES				
SOFTCHEWS				
SOFTGEL				
LIQUIDS	Droplets, Sprays, Syrups			
	UHT Milk			

	MenaQ7[®] Matrix	MenaQ7[®] MCC	MenaQ7[®] Palm-Free Oil	MenaQ7[®] Sunflower Oil
CARRIER	Organic Maltodextrin	MCC Powder	Organic Palm-Free MCT Oil	Sunflower Oil
GRADE (ppm)	2,000, 10,000	2,000	1,500, 10,000, 50,000	1,500, 10,000



Vegan



Non-GMO



Kosher



Halal

Discover Our Other Brochures

PORTFOLIO



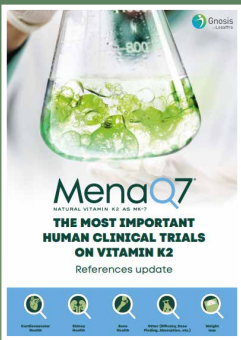
BENEFITS



CONCEPTS



SCIENCE



DISCOVER
MORE BROCHURES
HERE





REFERENCES

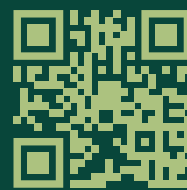
1. Sato et al. Nutrition Journal. 2012
2. Schurgers et al. Blood. 2007
3. Theuvsen et al. Food & Function. 2014
4. van Summeren et al. Br J Nutr 2009
5. Ozdemir et al. J Pediatr Hematol Oncol . 2013
6. van Summeren. Br J Nutr. 2008
7. Southward. Med Hypotheses . 2015
8. Kozioł-Kozakowska & Maresz . Neth Heart J. 2010
9. Maas & Appelman. Neth Heart J. 2010 Dec
10. Postmenopausal Osteoporosis: A Literature Review. Cureus. 2022
11. Booth et al. Alzheimers Dement (N Y). 2022
12. Akbulut et al. Nutrition and Oxidative Stress. 2022
13. Knapen et. Thromb Haemost . 2015
14. Mansour AG et al. J Am Soc Hypertens. 2017
15. Knapen MHJ et al. Osteoporos Int. 2013
16. Pan et al. VitroJ Med Food . 2016
17. <https://clinicaltrials.gov/study/NCT05943457>



This is a Business to Business information intended for food / food supplements manufacturers and not for the final consumer. Regulatory & Intellectual property requirements vary by country and applications (including claims). We encourage our customers to check the applicable local laws before launching the product on the market for each country. These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease. A healthy, balanced and diversified diet should fulfill all of our nutritional needs.

MenaQ7[®]

NATURAL VITAMIN K2 AS MK-7



MenaQ7.com



@MenaQ7VitaminK2



MenaQ7



Gnosis by Lesaffre - France
101 Rue de Menin
59700 - Marcq-en-Baroeul
+33 (0)3 20 81 61 00



www.GnosisByLesaffre.com
contact@gnosis.lesaffre.com