

KEEP INGREDIENTS CO. LTD

TECHNICAL DATA SHEET

Vitamin K2 Powder (Coated) 2000 ppm

1. PRODUCT IDENTIFICATION

Product name	Vitamin K2 Powder (Coated)
Active ingredient	Vitamin K2 (all-trans menaquinone-7, MK-7)
Specification	2000 ppm (0.2 %)
Product form	Water-dispersible microencapsulated powder (spray-dried)
Source	Bacillus subtilis natto (fermentation)
Appearance	White to light-yellow powder
Shelf life	24 months
Storage	Sealed, protected from light, stored in a cool and dry place; 10–20 °C, 45–65 % RH

2. DESCRIPTION

Vitamin K2 Powder (Coated) is a free-flowing, water-dispersible powder in which vitamin K2 (menaquinone-7), obtained by fermentation of Bacillus subtilis natto, is dissolved in the oil phase and embedded in a matrix of edible corn starch and sodium starch octenylsuccinate together with sodium caseinate, glyceryl monostearate and ascorbyl palmitate. The resulting powder is then coated with ethyl cellulose, dried, blended and packed. The product is intended for use as a source of vitamin K2 in food and nutritional applications.

3. COMPOSITION

Component	Content (%)	Function	Reference standard
Edible corn starch	69.0	Adsorbent	GB/T 8885
Ethyl cellulose	15.0	Powder-forming material	Chinese Pharmacopoeia
Sodium caseinate	8.0	Powder-forming material	GB 1886.212
Soybean oil	5.0	Carrier	GB/T 1535
Sodium starch octenylsuccinate	1.6	Adsorbent	GB 28303
Glyceryl monostearate	0.8	Emulsifier	GB 1886.65
Ascorbyl palmitate	0.4	Antioxidant	GB 1886.230
Vitamin K2	0.2	Active ingredient	NHFPC Announcement No. 8 of 2016
Total	100.0		

All ingredients comply with the food-grade specifications listed above. The product contains milk protein (sodium caseinate).

4. SPECIFICATION

Parameter	Specification	Test method
Organoleptic		
Appearance	White to light-yellow powder with a characteristic odour and taste, free from off-odour and visible foreign matter	Visual / Organoleptic
Physicochemical		
Identification	Consistent with the reference standard	HPLC
Vitamin K2 (all-trans MK-7)	1900–2200 ppm	HPLC
Moisture	≤ 5.0 %	GB 5009.3

Parameter	Specification	Test method
Ash	≤ 3.0 %	GB 5009.4
Lead (Pb) *	≤ 0.1 mg/kg	GB 5009.12
Total arsenic (As) *	≤ 0.1 mg/kg	GB 5009.11
Mercury (Hg) *	≤ 0.05 mg/kg	GB 5009.17
Cadmium (Cd) *	≤ 0.1 mg/kg	GB 5009.15
Aflatoxins (B1+B2+G1+G2) *	≤ 5 µg/kg	GB 5009.22
BHC (HCH) *	≤ 0.05 mg/kg	GB/T 5009.19
DDT *	≤ 0.05 mg/kg	GB/T 5009.19
Microbiological		
Total plate count	≤ 1000 CFU/g	GB 4789.2
Yeast and mould	≤ 100 CFU/g	GB 4789.15
Coliforms	< 3.0 MPN/g	GB 4789.3
Escherichia coli *	< 3.0 MPN/g	GB 4789.38
Salmonella *	Not detected / 25 g	GB 4789.4
Staphylococcus aureus *	Not detected / 25 g	GB 4789.10

* Items marked with an asterisk are tested by a third-party laboratory once per year on a batch basis.

5. CERTIFICATE OF ANALYSIS — EXAMPLE BATCH

Product name	Vitamin K2 Powder (Coated)
Batch No.	KYVK2026052601
Specification	2000 ppm
Quantity	262.4 kg
Source	Bacillus subtilis natto
Production date	26 May 2026
Test date	01 June 2026
Report date	08 June 2026
Test basis	NHFPC Announcement No. 8 of 2016 — Quality specification requirements for Vitamin K2 (fermentation)
Shelf life	24 months

Parameter	Specification	Result
Organoleptic		
Appearance	Conforms	Conforms
Physicochemical		
Identification	Consistent with the reference standard	Conforms
Vitamin K2 (all-trans MK-7)	1900–2200 ppm	2092 ppm
Moisture	≤ 5.0 %	3.68 %
Ash	≤ 3.0 %	0.067 %
Lead (Pb) *	≤ 0.1 mg/kg	Not detected
Total arsenic (As) *	≤ 0.1 mg/kg	Not detected
Mercury (Hg) *	≤ 0.05 mg/kg	Not detected
Cadmium (Cd) *	≤ 0.1 mg/kg	Not detected
Aflatoxins (B1+B2+G1+G2) *	≤ 5 µg/kg	Not detected
BHC (HCH) *	≤ 0.05 mg/kg	Not detected
DDT *	≤ 0.05 mg/kg	Not detected
Microbiological		
Total plate count	≤ 1000 CFU/g	< 10 CFU/g
Yeast and mould	≤ 100 CFU/g	< 10 CFU/g
Coliforms	< 3.0 MPN/g	< 3.0 MPN/g
Escherichia coli *	< 3.0 MPN/g	< 3.0 MPN/g
Salmonella *	Not detected / 25 g	Not detected

Parameter	Specification	Result
Staphylococcus aureus *	Not detected / 25 g	Not detected
Conclusion	Pass	

* Items marked with an asterisk are tested by a third-party laboratory once per year on a batch basis.
The Certificate of Analysis above relates to a representative example batch and is provided for reference purposes only.

6. MANUFACTURING PROCESS

The manufacturing process is shown schematically below. Vitamin K2 is dissolved in the oil phase and combined with the starch-based matrix to form the powder, which is subsequently coated, dried, blended and packed.

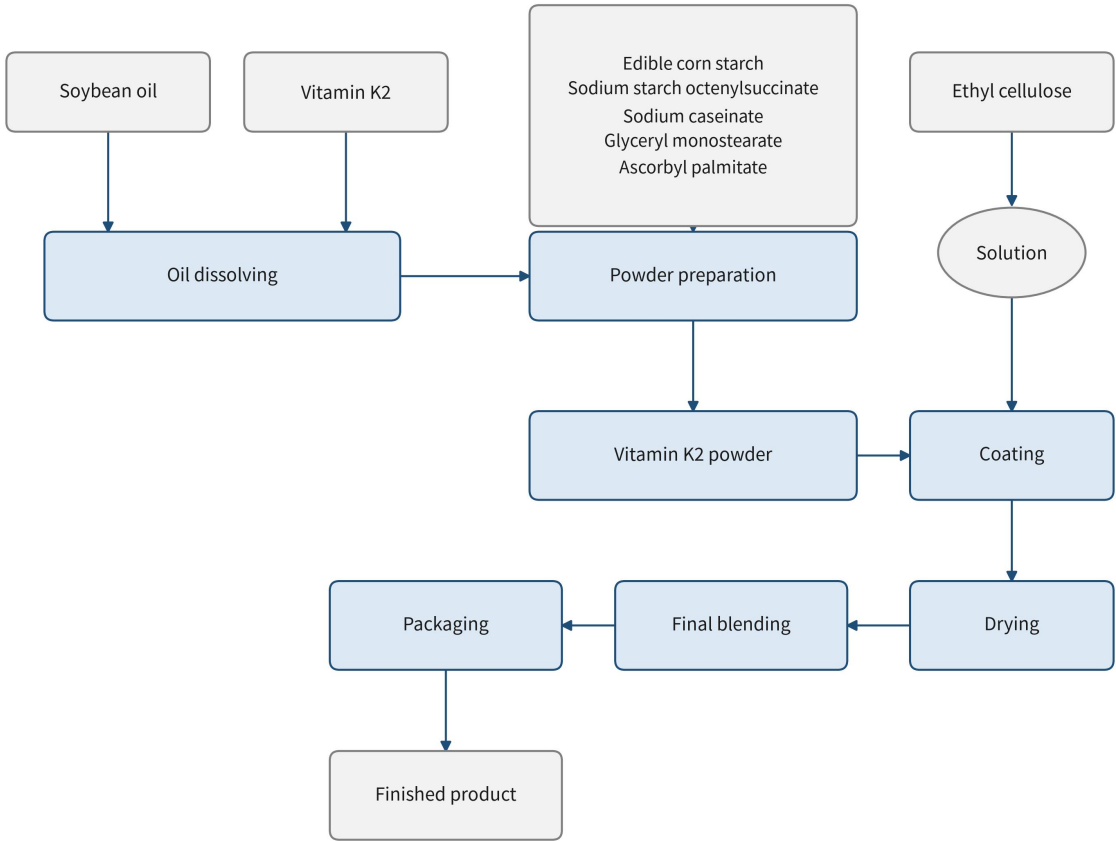


Figure 1 — Process flow diagram (schematic)

7. STORAGE AND SHELF LIFE

Storage conditions: sealed, protected from light, stored in a cool and dry place; recommended temperature 10–20 °C and relative humidity 45–65 %.

Shelf life: 24 months from the date of production when stored under the conditions stated above in the unopened original packaging.

