



NQAC

Nestlé Quality Assurance Center  
Dublin

# Technical Datasheet

**Analysis Name:** Vitamins A, D, E, K by UHPSFC-MSMS

**Method Number:** LI-00.608

**Scope of Application:** Infant formulas, cereals, healthcare nutritional products, oils (excluding vitamin E), culinary, premixes, and gummy-based vitamins for vitamins D, E and K. Vitamin K2-MK-7 is not in the scope of the method.

**Vitamin A is now analyzed by NQA-00.608\_V1.**

**Description:** The sample preparation is identical to ISO 20633:2015 for the determination of vitamins E in infant formula and adult/pediatric nutritionals and AOAC 2015.09 for the analysis of vitamin K1. Separation and detection are achieved by UHPSFC-MS/MS. Vitamins E and K are analyzed directly from the sample extract and vitamin D after a derivatization step (as in ISO 20636:2017).

Samples with known interferences to be analyzed for vitamin E require an alternative step during sample preparation that includes a saponification.

Reported units are: Vitamin E as mg/100 g, Vitamin D and K as µg/100 g.

**Sample Weight Required:** 50 g

**Analytical Platform:** UHPSFC-MS/MS

**Special Information:** Provide Certificate of Analysis (COA) or estimated levels for premixes.

Analyte Reported	Alias	Unit of Measure	Limit of Quantification	Reproducibility
Vitamin E	Alpha Tocopherol			



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		mg /100 g	0.1	
Vitamin E	Alpha Tocopheryl acetate	mg /100 g	0.1	<20%
Vitamin K1	phylloquinone	µg/100 g	2.0	<15%
Vitamin K2	menaquinone	µg/100 g	2.0	<15%
Vitamin D3	cholecalciferol	µg/100 g	0.2	<20%
Vitamin D2	ergocalciferol	µg/100 g	0.2	<20%

\*Based on infant formula matrix