



## Certificate of Analysis

### Vitamin K1 USP

**Catalog Number:** VK1001  
**Lot Number:** 0729904  
**CAS Number:** 84-80-0  
**Synonym(s):** 2-Methyl-3-phytyl-1,4-naphthoquinone, 3-Phytylmenadione  
Phylloquinone  
**Molecular Formula:**  $C_{31}H_{46}O_2$   
**Molecular Weight:** 450.71  
**Storage:** 2°C – 8°C, Light sensitive  
**Date of Manufacture:** October 1, 2018  
**Retest Date:** September 30, 2021

Test	Specification	Result
Appearance	Clear, yellow to amber liquid	Conforms
Assay (HPLC)	97.0 – 103.0%	99.07%
Assay (UV)	Absorptivity within 3.0% of standard	Conforms
Infrared Spectrum	To match reference spectrum	Conforms
Refractive Index	1.523 – 1.526	1.526
Solubility	Soluble in Absolute Alcohol, Benzene, Chloroform, Ether, Vegetable Oils. Insoluble in water	Conforms
Related Substances Limit of Menadione Z Isomer	No purple or blue color $\leq 21.0\%$	Conforms 11.0%
Litmus Reaction (50mg/mL in EtOH)	Neutral	Conforms

Approved by:

John Grubb, PhD  
Gojira Fine Chemicals, LLC  
Quality Manager  
Tel: 440-539-7033 Fax: 888-211-5523  
[john@gojirafc.com](mailto:john@gojirafc.com)

Date: July 30, 2019