

CERTIFICATE of ANALYSIS

PRODUCT: **Vitamin K₁, USP 38**
 [Phytomenadione; Phylloquinone; 3-Phytylmenadione; 2-Methyl-3-phytyl-1,4-naphthoquinone; Vitamin K1(20)]
C₃₁H₄₆O₂, M.W. 450.7, CAS# [84-80-0]

PRODUCT NUMBER: V-1002

LOT NUMBER: G1015

APPEARANCE: Clear, yellow to amber, very viscous, odorless or practically odorless liquid, having a specific gravity of about 0.967.

SOLUBILITY: Soluble in dehydrated alcohol, benzene, chloroform, ether, or vegetable oils; slightly soluble in alcohol; insoluble in water. ***STABLE IN AIR, BUT DECOMPOSES FROM EXPOSURE TO SUNLIGHT!***

	<u>SPECIFICATIONS:</u>	<u>RESULTS:</u>
IDENTIFICATION: <small>(Infrared & Ultraviolet)</small>	Absorptivities don't differ by more than 3.0%, USP monograph <197F>	Conforms
ASSAY:	97.0% - 103.0%	98.7%
Z ISOMER CONTENT:	≤21.0%	11.3%
LIMIT of MENADIONE:	No purple or blue color occurs after dropping it in to the solution of Ammonia hydroxide and alcohol	Conforms
REFRACTIVE INDEX:	1.523 ~ 1.526	1.524
REACTION:	A 50 mg/mL solution of phytonadione in dehydrated alcohol is neutral to litmus	Conforms
REFERANCE STANDARD:	USP 38 specifications	
COUNTRY OF ORIGIN:	China	
STORAGE & HANDLING:	Store at +4°C. Store under inert gas.	

PROTECT FROM AIR and LIGHT!
 CAUTION: For research use only. Not for human or drug use. The pharmacological and toxicological properties of this product have not been fully investigated. Use caution when handling. Do not use this compound if you are not fully trained or are unaware of the hazards involved.

Verified: KS