



CERTIFICATE OF ANALYSIS

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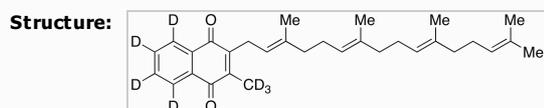
1. Identification

Catalogue Number: M218597

CAS Number: 1233937-25-1

Product: Menaquinone 4-d7 (Mixture of cis-trans isomers)

Synonym: (E,E,E)-2-Methyl-3-(3,7,11,15-tetramethyl-2,6,10,14-hexadecatetraenyl)-1,4-naphthalenedione-d7; 2-Methyl-3-geranylgeranyl-1,4-naphthoquinone-d7; Glakay-d7; Kaytwo-d7; MK4-d7; Menaquinone K4-d7; Menatetrenone-d7; Vitamin K2(20)-d7; Vitamin MK 4-d7;



Molecular Formula:

$C_{31}H_{33}D_7O_2$

Molecular weight:

451.69

Source of Product:

Synthetic

Solubility:

Chloroform (Slightly), Ethyl Acetate (Slightly), Methanol (Slightly)

Lot Number: 2-AVS-146-3

Purity: 95%

Shipping Condition: This Product Is Stable To Be Shipped With Blue Ice

Storage Condition: -20°C

2. Warning

Warning 1:

Warning 2:

Warning 3:

3. Analytical Information

Tests:	Specifications:	Results:
Appearance	Colourless to Dark Yellow Oil to Semi-Solid	Yellow to Dark Yellow Semi Solid
NMR	Conforms to Structure	Conforms
MS	Conforms to Structure	Conforms
HPLC Purity	Report Result	93.78% (254 nm)
Isotopic Purity	>95%	96.5%

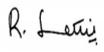
Additional Information: Normalized Intensity: d0 = 0.32%, d1 = 0.20%, d2 = 3.11%, d3 = 0.00%, d4 = 0.00%, d5 = 0.60%, d6 = 4.00%, d7 = 91.76%

Purity is based on the analytical results of the tests performed. NMR and Elemental Analysis (if available) may have an accuracy of $\pm 2\%$. Isotopic purity is based on mass distribution observed. The contents of the specifications are subject to change without advance notice, and the specification values displayed here are the most up to date values.

4. Signatures

Reviewed By

Swathi Reddy



Reviewed By

Toni Rantanen



**C of A Approved
By**

Chanell Chu



Test Date

4/20/2022

Retest Date

4/18/2026