



CERTIFICATE OF ANALYSIS

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1. Identification

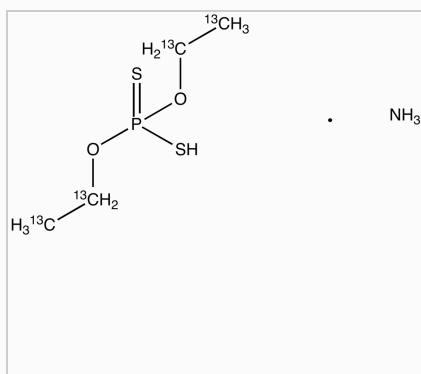
Catalogue Number: D444267

CAS Number: 1329641-22-6

Product: O,O-Diethyl Dithiophosphate-13C4 Ammonium Salt

Synonym: Phosphorodithioic Acid O,O-Diethyl Ester-13C4 Ammonium Salt; Ammonium Ethyl Phosphorodithioate-13C4 ; Phosphorodithioic Acid O,O-Diethyl Ester-13C4 Ammonium Salt; Ammonium O,O-Diethyl Dithiophosphate-13C4 ; Ammonium O,O-Diethyl Phosphorodithioate-13C4 ; Ammonium Di-O-ethyl Dithiophosphate-13C4 ; Ammonium Diethyldithiophosphate-13C4 ; NF 133-13C4 ; O,O-Diethyl Ammonium Phosphorodithioate-13C4; O,O-Diethylphosphorodithioic Acid-13C4 Ammonium Salt;

Structure:



Molecular Formula:

$^{13}\text{C}_4\text{H}_{14}\text{NO}_2\text{PS}_2$

Molecular weight:

207.23

Source of Product:

Synthetic

Solubility:

DMSO (Slightly), Methanol (Slightly, Heated)

Lot Number: 6-PGG-26-3

Purity: 98%

Shipping Condition: This Product Is Stable To Be Shipped At Room Temperature

Storage Condition: -20°C

2. Warning

Warning 1:

Warning 2:

Warning 3:

3. Analytical Information

Tests:	Specifications:	Results:
Appearance	White to Off-White Solid	Off-White Solid
NMR	Conforms to Structure	Conforms
Ammonium Content	Report Result	8.41% by Ion Chromatography
P NMR	Conforms to Structure	Conforms
Elemental Analysis	Conforms	%C: 22.21, %H: 6.81, %N: 6.55
HPLC Purity	Report Result	98.86% (235 nm)
MS	Conforms to Structure	Conforms
Isotopic Purity	>95%	99.2%

Additional Information:

Normalized Intensity: $^{13}\text{C}0 = 0.00\%$, $^{13}\text{C}1 = 0.00\%$, $^{13}\text{C}2 = 0.00\%$, $^{13}\text{C}3 = 3.35\%$, $^{13}\text{C}4 = 96.65\%$

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

Henry Tieu



Reviewed By

Toni Rantanen



**C of A Approved
By**

Chanell Chu



Test Date

5/26/2023

Retest Date

5/24/2027