

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2023-04-10 19:01:31

Date of Next Testing: 2026-04-09 19:01:31

Product Name: **RuCl₂[(S)-(DM-BINAP)][(S,S)-DPEN]**

CAS Number: 220114-03-4

Specifications & Purity: ≥98%

Lot #: D2304308

SKU #: **R488482**

Version: **1**

Analysis #: **183818**

Storage Temperature: Store at 2-8°C, Protected from light, Argon charged

Parameter	Limit Values	Result
Specific rotation [α] _{20/D} (C = 0.5%, CHCl ₃)	-770.0~-630.0 (°)	-686.20000 °
Carbon by Elemental Analysis	67.97-73.63 (%)	69.35300 %
Appearance(R488482)	Yellow to Brown to Dark green powder to crystal	Yellow to Brown to Dark green powder to crystal
NMR Spectrum 1H	Conforms to Structure	Conforms to Structure
Phosphorus NMR spectrum	conforms to structure	Conforms to Structure



John Su
QA & QC Manager