

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2023-05-18 14:32:51
 Date of Next Testing: 2025-05-17 14:32:51
 Product Name: **(S)-RuCl[(p-cymene(BINAP)]Cl**
 CAS Number: 130004-33-0
 Specifications & Purity: 99.95% metals basis
 Lot #: E2315021
 SKU #: **S294487**
Analysis: 225202
 Storage Temperature: Store at 2-8°C, Argon charged

Parameter	Limit Values	Result
Purity(Based On Trace Metals Analysis)	99.95-100 (%)	99.98 %
Total Metallic Impuritie	0-500 (ppm)	0.30 ppm
Specific rotation [α] ₂₀ /D(C = 0.5%,CHCl ₃)	-610~-510 (°)	-560.00000 °
Appearance(S294487)	White to Yellow to Very Dark Yellow and Orange to Very Dark Orange to Brown to Dark purple Powder to crystal	White to Yellow to Very Dark Yellow and Orange to Very Dark Orange to Brown to Dark purple Powder to crystal
NMR Spectrum 1H	Conforms to Structure	Conforms to Structure
ICP: Confirms Ruthenium Component	Confirmed	Confirmed



John Su
QA & QC Manager