

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2023-01-04 15:26:31
 Date of Next Testing: 2024-12-24 15:26:31
 Product Name: (R)-(+)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthalene
 CAS Number: 76189-55-4
 Specifications & Purity: ≥98%
 Lot #: F1927038
 SKU #: B106732
 Version: 1
 Analysis #: 173905
 Storage Temperature: Room temperature, Argon charged

Parameter	Limit Values	Result
Melting point	240-243 (°C)	241.50000 °C
Purity(HPLC)	98-100 (%)	99.16000 %
Optical purity(HPLC)(ee)	99-100 (%)	99.73000 %
Specific rotation $[\alpha]_{20/D}(C=0.3\%, \text{Toluene})$	218 - 248 (°)	243.20000 °
Appearance (B106732)	white to beige powder or crystals	white to beige powder or crystals
Phosphorus NMR Spectra	Conforms to Structure	Conforms to Structure



John Su
QA & QC Manager