

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2023-07-14 16:23:42
 Date of Next Testing: 2025-07-03 16:23:42
 Product Name: (R)-(+)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthalene
 CAS Number: 76189-55-4
 Specifications & Purity: ≥98%
 Lot #: G2311655
 SKU #: B106732
 Version: 1
 Analysis #: 185835
 Storage Temperature: Room temperature, Argon charged

Parameter	Limit Values	Result
Melting point	240-243 (°C)	241.66000 °C
Specific rotation $[\alpha]_{20/D}(C=0.3\%, \text{Toluene})$	218 - 248 (°)	239.45200 °
Purity(HPLC)	98-100 (%)	99.94900 %
Optical purity(HPLC)(ee)	99-100 (%)	100.00000 %
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