

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2024-06-13 17:05:22  
Date of Next Testing: 2027-06-13 17:05:22  
Product Name: **(S,S)-(+)-2,3-Bis(t-butylmethylphosphino)quinoxaline**  
CAS Number: 1107608-80-9  
Specifications & Purity:  $\geq 98\%$   
Lot #: F2406318  
SKU #: **S281834**  
Version: **1**  
Analysis #: **361311**  
Storage Temperature: Store at 2-8°C, Argon charged

Parameter	Limit Values	Result
Purity(HPLC area)	98-100 (%)	98.52%
Specific Rotation $[\alpha]_{20/D}(c=1 \text{ in CHCL}_3)$	50-59 ( $^{\circ}$ )	58.76 $^{\circ}$
Appearance(S281834)	White to Yellow to Brown powder to crystal	White to yellow to brown powder to crystal
LC-MS for identification	Conforms	Conforms
NMR Spectrum 1H	Conforms to structure	Conforms to Structure



John Su  
QA & QC Manager