

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2023-03-02 16:23:47

Date of Next Testing: 2026-03-01 16:23:47

Product Name: (S)-(+)-(3,5-Dioxa-4-phospha-cyclohepta[2,1-a;3,4-a"]dinaphthalen-4-yl)morpholine

CAS Number: 185449-81-4

Specifications & Purity:  $\geq 96\%$ ,  $\geq 99\%$ (ee)

Lot #: B23241126

SKU #: S281989

Version: 1

Analysis #: 161609

Storage Temperature: Room temperature, Argon charged

| Parameter           | Limit Values          | Result                |
|---------------------|-----------------------|-----------------------|
| Enantiomeric Excess | 99-100 (%)            | 99.20000 %            |
| Purity(HPLC area)   | 96-100 (%)            | 96.54600 %            |
| NMR Spectrum 1H     | Conforms to Structure | Conforms to Structure |
| 31P NMR spectrum    | Conforms to structure | Conforms to Structure |



John Su  
QA & QC Manager