

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2024-07-22 14:46:47  
Date of Next Testing: 2028-07-21 14:46:47  
Product Name: **(S)-(-)-1,1'-Binaphthyl-2,2'-diamine**  
CAS Number: 18531-95-8  
Specifications & Purity:  $\geq 99\%$   
Lot #: G2415703  
SKU #: **S138404**  
Version: **0**  
Analysis #: **361090**

| Parameter  | Limit Values                                      | Result  |
|--|---|---|
| Purity(HPLC)   | 99-100 (%)  | 99.68600 %  |
| Specific Rotation [a] <sub>D</sub> 20/D(c=1 in Pyridine) | -158--154 (°)                                     | -154.43 °   |
| Melting point  | 241-246 (°C)                                      | 241.36000 °C                                      |
| Appearance (S138404)                                     | White to Tan to Purple Powder, Crystals or Chunks | White to Tan to Purple Powder, Crystals or Chunks |
| Proton NMR spectrum                                      | Conforms to Structure                             | Conforms to Structure                             |



John Su  
QA & QC Manager