

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

| | |
|--------------------------|---|
| Date of Testing: | 2023-02-01 16:08:34 |
| Date of Next Testing: | 2025-01-21 16:08:34 |
| Product Name: | (S)-(+)-1,1'-Binaphthyl-2,2'-diyl Bis(trifluoromethanesulfonate) |
| CAS Number: | 128544-05-8 |
| Specifications & Purity: | 95% |
| Lot #: | A2329421 |
| SKU # | B115802 |
| Analysis: | 153631 |

| Parameter | Limit Values | Result |
|---|---|---|
| Melting point | 81-85 (°C) | 84.22000 °C |
| Lambda max(CH ₃ CN) | 215-225 (nm) | 217.00 nm |
| Molar extinction coefficient (λ:215.0 -225.0 nm,CH ₃ CN) | ≥115000 | 116000.00 |
| Carbon by Elemental Analysis | 46.3-49.7 (%) | 48.01 % |
| Purity(HPLC) | 95-100 (%) | 99.87900 % |
| Sulfur by Elemental Analysis | 11.2-12.1 (%) | 11.20 % |
| Specific Rotation [α] ₂₀ /D(c=1 in THF) | 135-154 (°) | 151.42 ° |
| Appearance (B115802) | white to yellow powder, crystals, and/or chunks | white to yellow powder, crystals, and/or chunks |



John Su
QA & QC Manager