

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2023-06-11 20:40:45  
 Date of Next Testing: 2027-06-10 20:40:45  
 Product Name: (S)-(+)-3-Chloro-1,2-propanediol  
 CAS Number: 60827-45-4  
 Specifications & Purity:  $\geq 97\%$   
 Lot #: F23051000  
 SKU #: C106059  
 Version: 1  
 Analysis #: 101586  
 Storage Temperature: Room temperature

| Parameter                                                       | Limit Values               | Result                     |
|-----------------------------------------------------------------|----------------------------|----------------------------|
| Refractive index $n_{20/D}$                                     | 1.478-1.482                | 1.47970                    |
| Enantiometric Excess                                            | 97-100 (%)                 | 98.99000 %                 |
| Specific Rotation $[\alpha]_{20/D}(c=2 \text{ in H}_2\text{O})$ | 7.5-10.5 ( $^\circ$ )      | 8.15400 $^\circ$           |
| Density (25 $^\circ$ C)                                         | 1.321-1.324                | 1.32300                    |
| Purity(GC)                                                      | 97-100 (%)                 | 99.20600 %                 |
| Appearance (C106059)                                            | Colorless to Yellow Liquid | Colorless to Yellow Liquid |
| Proton NMR spectrum                                             | Conforms to structure      | Conforms to Structure      |



John Su  
QA & QC Manager