

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2022-06-24 17:18:15

Date of Next Testing: 2026-06-23 17:18:15

Product Name: (2-Hydroxypropyl)- $\beta$ -cyclodextrin

CAS Number: 128446-35-5

Specifications & Purity:  $\geq 97\%$

Lot #: F2223135

SKU #: H108813

Version: 2

Analysis #: 099881

Storage Temperature: Room temperature

| Parameter                                                                           | Limit Values                 | Result                       |
|-------------------------------------------------------------------------------------|------------------------------|------------------------------|
| Specific Rotation $[\alpha]_{20/D}(c=1 \text{ in H}_2\text{O})$                     | 120-135 (°)                  | 131.99500 °                  |
| Water by Karl Fischer                                                               | 0-7.5 (%)                    | 6.77340 %                    |
| beta-cyclodextrin (dry basis)                                                       | 0-2 (%)                      | 1.30000 %                    |
| NMR (degree of substitution)                                                        | 2-6                          | 4.50000                      |
| Purity(HPLC)                                                                        | 97-100 (%)                   | 99.52600 %                   |
| Appearance (H108813)                                                                | White to Off-White<br>Powder | White to Off-White<br>Powder |
| Proton NMR spectrum                                                                 | Conforms to Structure        | Conforms to Structure        |
| Solubility in H <sub>2</sub> O , Colorless to Very Faint Yellow, Clear, 2g plus 5ml | pass                         | Pass                         |



John Su  
QA & QC Manager