

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

| | |
|--------------------------|---|
| Date of Testing: | 2022-11-11 15:22:51 |
| Date of Next Testing: | 2026-11-10 15:22:51 |
| Product Name: | (2-Hydroxypropyl)-γ-cyclodextrin |
| CAS Number: | 128446-34-4 |
| Specifications & Purity: | average Mw ~1,580 |
| Lot #: | K2204401 |
| SKU # | H102030 |
| Version | 0 |
| Analysis #: | 117459 |

| Parameter | Limit Values | Result |
|------------------------------------|---|---|
| Purity(Cyclodextrine Content Cal.) | 98-100 (%) | 99.87 % |
| PH(2% in Water) | 6-9 | 7.39 |
| Propylene glycol | 0-0.1 (%) | 0.04 % |
| Unsubstituted Cyclodextrine | 0-1.5 (%) | 1.05 % |
| Absorbance(220-350nm,2 % in H2O) | 0-0.5 | 0.04 |
| Loss on drying | 0-5 (%) | 0.00 % |
| Heavy metals | 0-5 (ppm) | 0.67 ppm |
| Volatile Impurities (decan) | 0-50 (ppm) | 25.58 ppm |
| Absorbance(350-660nm,2 % in H2O) | 0-0.5 | 0.00 |
| Molar Substitution | 0.5-0.7 | 0.64 |
| Ignition Residue | 0-0.1 (%) | 0.10 % |
| Appearance (H102030) | White to Off-White Solid, Powder, or Crystals | White to Off-White Solid, Powder, or Crystals |
| Infrared spectrum | Conforms to Structure | Conforms to Structure |



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A handwritten signature in black ink that reads "John Su". The signature is written in a cursive, flowing style.

John Su
QA & QC Manager