

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2022-03-01 15:48:32  
 Date of Next Testing: 2026-02-28 15:48:32  
 Product Name: **Sulfobetaine 12**  
 CAS Number: 14933-08-5  
 Specifications & Purity: 98%  
 Lot #: B2223528  
 SKU #: **S105512**  
**Analysis:** **059300**  
 Storage Temperature: Store at 2-8°C, Argon charged

| Parameter   | Limit Values                | Result                      |
|---|-----------------------------|-----------------------------|
| Ignition Residue  | 0-0.1 (%)                   | 0.06 %                      |
| Zinc(Zn)  | 0-5 (ppm)                   | 0.00 ppm                    |
| Insoluble matter  | 0-0.1 (%)                   | 0.05 %                      |
| Calcium(Ca)   | 0-0.002 (%)                 | 0.00 %                      |
| Copper(Cu)  | 0-5 (ppm)                   | 0.00 ppm                    |
| Potassium(K)  | 0-50 (ppm)                  | 1.22 ppm                    |
| Phosphate(PO4)  | 0-5 (ppm)                   | 2.00 ppm                    |
| Chloride (Cl-)  | 0-0.05 (%)                  | 0.03 %                      |
| Purity(HPLC)  | 98-100 (%)                  | 99.96200 %                  |
| Iron(Fe)  | 0-5 (ppm)                   | 0.48 ppm                    |
| Hydrogen by Elemental Analysis                            | 10.7-11.3 (%)               | 11.00 %                     |
| Aluminum(Al)  | 0-5 (ppm)                   | 0.00 ppm                    |
| Magnesium(Mg)   | 0-5 (ppm)                   | 0.85 ppm                    |
| Sulfur by Elemental Analysis                              | 0-0.05 (%)                  | 0.02 %                      |
| (Pb)Lead  | 0-0.001 (%)                 | 0.00 %                      |
| Ammonia (NH4)   | 0-500 (ppm)                 | 30.00 ppm                   |
| Sodium(Na)  | 0-50 (ppm)                  | 4.02 ppm                    |
| Nitrogen by Elemental Analysis                            | 3.9-4.4 (%)                 | 3.92 %                      |
| Carbon by Elemental Analysis                              | 59.4-61 (%)                 | 60.85 %                     |
| Appearance (S105512)                                      | White powder                | White powder                |
| Infrared spectrum   | Conforms to Structure       | Conforms to Structure       |
| metal trace analysis (icp)                                | corresponds to requirements | CORRESPONDS TO REQUIREMENTS |
| Solubility in H2O(20°C , colorless clear (< 3.5 ntu), 1M) | pass                        | Pass                        |



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A handwritten signature in black ink that reads "John Su".

John Su  
QA & QC Manager