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## CERTIFICATE OF ANALYSIS

**PRODUCT NAME:** CSDAU  
**CHEMICAL:** C8 + Benzyl Sulfonic Acid  
**SILICA TYPE:** Irregular particles 40-63 micron, 60 Angstrom pores  
**LOT NUMBER:** 222060-ZQ

| <u>Test</u>                                    | <u>Method</u> | <u>Specification Values</u> |            | <u>Lot Analysis</u>     |
|--|---------------|-----------------------------|------------|-------------------------|
|  |               | <u>Min</u>                  | <u>Max</u> |                         |
| Appearance                                     | Visual        | White Fine Powder           |            | White Fine Powder       |
| Average Pore Size                              | SOP82-4.042   | 55Å                         | 65Å        | 60Å                     |
| Surface Area (m <sup>2</sup> /g)               | SOP82-4.042   | 470                         | 530        | 504 m <sup>2</sup> /g   |
| Pore Volume (cm <sup>3</sup> /g)               | SOP82-4.042   | 0.70                        | 0.85       | 0.74 cm <sup>3</sup> /g |
| Carbon Analysis by Weight<br>(Organic Loading) | SOP82-4.024   | 12.00%                      | 12.80%     | 12.18%                  |
| Cation Exchange                                | SOP82-4.025   | 0.065meq/g                  | 0.088meq/g | 0.072meq/g              |
| %Recovery - Acid                               | SOP82-4.011   | 85.00%                      | 110.0%     | Pass                    |
| %Recovery - Neutral                            | SOP82-4.011   | 85.00%                      | 110.0%     | Pass                    |
| %Recovery - Base                               | SOP82-4.011   | 85.00%                      | 110.0%     | Pass                    |

*The shelf life is only valid if the material is stored in the original unopened container.*

*The specifications and lot analysis are only valid using the listed methods.*

*The test methods and specifications were current when the product was lotted.*

**CERTIFIED BY:**  
**NAME:** L. Bender

**TITLE:** QC Analyst

**Certificate issue DATE:** 06/16/2022

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