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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

322140-AY LOT NUMBER:

		Specification Values		Lot Analysis
<u>Test</u>	Method	<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 ² /g)	SOP82-4.042	470	530	504 m 2 /g
Pore Volume (cm ³ /g)	SOP82-4.042	0.70	0.85	$0.74 \text{ cm}^3/\text{g}$
Carbon Analysis by Weight	SOP82-4.024	12.00%	12.80%	12.34%
(Organic Loading)				
Cation Exchange	SOP82-4.025	0.065 meq/g	0.088meq/g	0.069 meq/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: 05/02/2023

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