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## CERTIFICATE OF ANALYSIS

**PRODUCT NAME:** CUMPS15C18CT  
**CHEMICAL:** Mixture of MgSO<sub>4</sub>, CUPSA, CEC18  
**SILICA TYPE:** Irregular particles 40-63 micron, 60 Angstroms  
**LOT NUMBER:** 040022-NK

		<u>Specification Values</u>		<u>Lot Analysis</u>
<u>Test</u>	<u>Method</u>	<u>Min</u>	<u>Max</u>	
Average Pore Size	SOP82-4.042	55Å	65Å	60Å
Surface Area (m <sup>2</sup> /g)	SOP82-4.042	470	530	508 m <sup>2</sup> /g
Pore Volume (cm <sup>3</sup> /g)	SOP82-4.042	0.70	0.85	0.79 cm <sup>3</sup> /g
Appearance	Visual	White Fine Powder		White Fine Powder
<b>MgSO4</b> (lot#513201-AX)				
Assay	Ignition	99.50%	100.5%	100.0%
● Total sorbent weight per tube (150mg)		143	158	Conforms
<b>CUPSA</b> (lot#519111-FK)				
Carbon Analysis by Weight (Organic Loading)	SOP82-4.024	10.50%	12.50%	10.82%
Anion Exchange	SOP82-4.028	1.00	1.50	1.097meq/g
● Total sorbent weight per tube (150mg)		143	158	Conforms
<b>CEC18</b> (lot#517121-ZV)				
Carbon Analysis by Weight (Organic Loading)	SOP82-4.024	20.50%	22.70%	21.02%
Endcapping	SOP82-4.027	0.00abs	0.90abs	0.657abs
● Total sorbent weight per tube (50mg)		48	53	Conforms
● All components of this product are individually weighed. The mass of each raw material meets method required tolerances.				

*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:** D. Kearns

**TITLE:** QC MANAGER

**Certificate issue DATE:** 03/29/2019

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