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## CERTIFICATE OF ANALYSIS

**PRODUCT NAME:** CUMPSC1815CT2  
**CHEMICAL:** Mixture of MgSO<sub>4</sub>, CUPSA, CEC18  
**SILICA TYPE:** Irregular particles 40-63 micron, 60 Angstroms  
**LOT NUMBER:** 073094-TL

|                                                                                                                            |               | <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        | 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 |
| Appearance                                                                                                                 | Visual        | White Fine Powder           |            | White Fine Powder       |
| <b>MgSO4</b> (lot#226040-BQ)                                                                                               |               |                             |            |                         |
| Assay                                                                                                                      | Ignition      | 99.50%                      | 100.5%     | 100.1%                  |
| ● Total sorbent weight per tube (1200mg)                                                                                   |               | 1140                        | 1260       | Conforms                |
| <b>CUPSA</b> (lot#224160-HB)                                                                                               |               |                             |            |                         |
| Carbon Analysis by Weight<br>(Organic Loading)                                                                             | SOP82-4.024   | 10.50%                      | 12.50%     | 11.20%                  |
| Anion Exchange                                                                                                             | SOP82-4.028   | 1.00                        | 1.50       | 1.071meq/g              |
| ● Total sorbent weight per tube (400mg)                                                                                    |               | 380                         | 420        | Conforms                |
| <b>CEC18</b> (lot#224170-CZ)                                                                                               |               |                             |            |                         |
| Carbon Analysis by Weight<br>(Organic Loading)                                                                             | SOP82-4.024   | 20.50%                      | 22.70%     | 21.07%                  |
| Endcapping                                                                                                                 | SOP82-4.027   | 0.00abs                     | 0.90abs    | 0.485 abs               |
| ● Total sorbent weight per tube (400mg)                                                                                    |               | 380                         | 420        | 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:** L. Bender

**TITLE:** QC Analyst

**Certificate issue DATE:** 12/30/2022

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