2731 Bartram Road Bristol, PA 19007-6893 800.385.3153 www.unitedchem.com

CERTIFICATE OF ANALYSIS

PRODUCT NAME: CUMPSGGC182CT

CHEMICAL: Mixture of MgSO4, CUPSA, EEC18, ChloroFiltr SILICA TYPE: Irregular particles 40-63 micron, 60 Angstroms LOT NUMBER: 042106-AA

| | | Specification Values | | | Lot Analysis |
|--|---------------|-----------------------------|-----------|-----------|------------------------------|
| Test | Method | Min | Max | | |
| Average Pore Size | SOP82-4.042 | 55Å | 65Å | | 60Å |
| Surface Area (m ² /g) | SOP82-4.042 | 470 | 530 | | $530 \text{ m}^2/\text{g}$ |
| Pore Volume (cm ³ /g) | SOP82-4.042 | 0.70 | 0.85 | | $0.75 \text{ cm}^3/\text{g}$ |
| Appearance | Visual | White Fir | ne Powder | White Fir | ne Powder |
| MgSO4 (lot#814160-BD) | | | | | |
| Assay | Ignition | 99.50% | 100.5% | | 99.90% |
| • Total sorbent weight per tube (150mg) | | 143 | 158 | | Conforms |
| CUPSA (lot#818011-GD) | | | | | |
| Carbon Analysis by Weight (Organic Loading) | SOP82-4.024 | 10.50% | 12.50% | | 11.00% |
| Anion Exchange | SOP82-4.028 | 1.00 | 1.50 | | 1.119meq/g |
| • Total sorbent weight per tube (50mg) | | 48 | 53 | | Conforms |
| EEC18 (lot#818020-BB) | | | | | |
| Carbon Analysis by Weight (Organic Loading) | SOP82-4.024 | 20.50% | 22.70% | | 20.72% |
| Endcapping | SOP82-4.027 | 0.00abs | 2.00abs | | 0.737abs |
| • Total sorbent weight per tube (50mg) | | 48 | 53 | | Conforms |
| Chloro Filtr® (lot#20180365) | | Conform | s | | Conforms |
| • 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 ANALYST

Certificate issue DATE: 05/06/2019

2731 Bartram Road / Bristol, PA 19007 USA / Phone 215-781-9255 / Fax 215-785-1226

Email: info@unitedchem.com Internet: HTTP://www.unitedchem.com