



Cedar Lake Facility  
 Sodium Sulfate  
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**CERTIFICATE OF ANALYSIS  
 NATURAL SODIUM SULFATE**

**LOT #:** 08/07/18

**Product:** STANDARD

**BAGGER**

| CHEMICAL ANALYSIS                             |                        |        | TRACE METAL ANALYSIS              |                       |        | NOTES   |  |
|---|------------------------|--------|-----------------------------------|-----------------------|--------|---|--|
| Analyte                                       | Spec                   | Actual | Element                           | Max                   | Actual |   |  |
| Purity (% Na <sub>2</sub> SO <sub>4</sub> )#3 |                        | 99.8   | Fe (ppm) #1                       |                       | 3      | Note #1: These values are from weekly statistical control data.   |  |
| NaCl (%)#2                                    |                        | 0.2    |                                   |                       |        |   |  |
| Water Insoluble (%)#1                         |                        | 0.01   |                                   |                       |        |   | Note #2: These values are from analysis of samples taken from this shipment. |
| Mg(%)#1                                       |                        | 0.01   |                                   |                       |        |   |  |
| Na <sub>2</sub> CO <sub>3</sub> (%) #4        |                        | <0.005 |                                   |                       |        |   |  |
|   |                        |        | PHYSICAL PROPERTIES               |                       |        | Note #3: Na <sub>2</sub> SO <sub>4</sub> is determined by difference (100 minus insoluble, minus MgSO <sub>4</sub> , minus NaCl). |  |
|   |                        |        | pH (5% Solution)#2                |                       |        |   |  |
|   |                        |        | 27°C                              |                       | 6.9    |   |  |
|   |                        |        | 80°C                              |                       |        |   |  |
|   |                        |        | Density (lbs/ft <sup>3</sup> ) #2 |                       | 92.6   | Note #4: Taken from quarterly statistical control analyses.   |  |
| Optical Brightness                            |                        |        | Moisture (%) #1                   |                       | 0.01   |   |  |
|   |                        |        | Appearance                        | white, crystalline    |        |   |  |
| SCREEN ANALYSIS                               |                        |        |                                   |                       |        | NOTES   |  |
| Screen #                                      | Retained On Screen (%) |        |                                   | Cumulative % Retained |        |   |  |
|   | Customer Specs         |        | # 2                               | Customer Specs        |        |   |  |
| U.S.  | Tyler                  | Min    | Max                               | Actual                | Min    | Max   | Actual   |
| 20  |                        |        |                                   | 0.0%                  |        |   | 0.0%   |
| 40  |                        |        |                                   | 1.2%                  |        |   | 1.2%   |
| 60  |                        |        |                                   | 26.8%                 |        |   | 28.1%  |
| 80  |                        |        |                                   | 29.1%                 |        |   | 57.2%  |
| 100   |                        |        |                                   | 14.2%                 |        |   | 71.4%  |
| 140   |                        |        |                                   | 13.1%                 |        |   | 84.5%  |
| 200   |                        |        |                                   | 7.0%                  |        |   | 91.4%  |
| -200  |                        | 20.0   |                                   | 8.6%                  |        |   | 100.0%   |
| TOTAL   |                        |        |                                   | 100.0%                |        |   |  |

**Comments:** This product is certified to meet the limits of impurities (heavy metals, arsenic and selenium) Food Chemicals Codex Tenth Edition.

*RLK*

REVIEWED BY

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ANALYZED BY