

## Giles Chemical, a division of Premier Magnesia, LLC. 102 Commerce Street Waynesville, NC 28786

Phone: 828-452-4784 Fax: 828-452-4786 Tech Certificate of Analysis

| Release Date:  | 6/23/2018                |                    |  |  |  |
|----------------|--------------------------|--------------------|--|--|--|
| CUSTOMER :     |                          |                    |  |  |  |
| CUST. REF:     |                          | SHIP DATE:         |  |  |  |
| PRODUCT:       | Magnesium Sulfate - Tech | TRAILER NUMBER:    |  |  |  |
| SHELF LIFE:    | 3 Years                  | BILL OF LADING #:_ |  |  |  |
| LOT NUMBER:    | 2618                     | PO NUMBER #:_      |  |  |  |
| CARRIER:       |                          | MANUFACTURED:      |  |  |  |
| CUST. CONTACT: |                          | EXPIRATION:        |  |  |  |

I certify that this material meets all the requirements of the Giles Chemical sales specifications. Periodic testing has shown the samples to be consistently free of volatile organic impurities. Giles Chemical magnesium sulfate is manufactured under the guidelines of Current Good Manufacturing Practices (cGMP).

## EPSOM SALT, Magnesium Sulfate - Heptahydrate, Tech Grade

| METHOD                         | TEST                       | LOWER | UPPER   | Test Results |
|--------------------------------|----------------------------|-------|---------|--------------|
| VISUAL                         | Appearance                 | ~~    | ~~      | Clear        |
| L12-PR-100-004                 | Limit of Chloride          | ~~    | 140 ppm | < 140 ppm    |
| L12-PR-100-005                 | Limit of Iron              | ~~    | 20 ppm  | < 20 ppm     |
| L12-PR-100-007                 | Selenium                   | ~~    | 30 ppm  | < 30 ppm     |
| L12-PR-100-006                 | Heavy Metals (as Pb)       | ~~    | 10 ppm  | < 10 ppm     |
| L12-PR-100-002                 | pH (5% Solution)           | 5.0   | 9.2     | 6.3          |
| L12-PR-100-003                 | Loss on Ignition           | 40.0  | 52.0    | 50.75%       |
| L12-PR-100-008                 | Assay, % MgSO4 (Dry Basis) | 99.0  | 100.5   | 99.40%       |
| Calculated from<br>Assay & LOI | % MgSO4 (As is Basis)      | 47.52 | 60.3    | 48.95%       |
| L12-PR-100-001                 | ID, Magnesium              | ~~    | ~~      | Present      |
| L12-PR-100-001                 | ID, Sulfate                | ~~    | ~~      | Present      |

CONTACT: ANALYST:

Quality Assurance Laboratory SIGNATURE ON FILE

Brent Lance - Chemist