



**Giles Chemical, a division of Premier Magnesia, LLC. Repackaging Facility**  
**102 Commerce Street Waynesville, NC 28786**  
**Phone: 828-452-4784 Fax: 828-452-4786**  
**USP Certificate of Analysis**

Release Date: 11/27/2016

CUSTOMER : \_\_\_\_\_

CUST. REF: \_\_\_\_\_ SHIP DATE: \_\_\_\_\_

PRODUCT: Magnesium Sulfate - USP TRAILER NUMBER: \_\_\_\_\_

SHELF LIFE: 3 Years BILL OF LADING #: \_\_\_\_\_

LOT NUMBER: 15330 PO NUMBER #: \_\_\_\_\_

CARRIER: \_\_\_\_\_ MANUFACTURED: \_\_\_\_\_

CUST. CONTACT: \_\_\_\_\_ EXPIRATION: \_\_\_\_\_

I certify that this material meets all the requirements of the Giles Chemical sales specifications and the United States Pharmacopeia. 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, USP**

| METHOD                      | TEST                                   | LOWER | UPPER   | Test Results |
|-----------------------------|--|-------|---------|--------------|
| VISUAL                      | Appearance                             | ~~    | ~~      | Clear        |
| USP 38                      | Limit of Chloride <221>                | ~~    | 140 ppm | < 140 ppm    |
| USP 38                      | Limit of Iron <241>                    | ~~    | 20 ppm  | < 20 ppm     |
| USP 38                      | Selenium <291>                         | ~~    | 30 ppm  | < 30 ppm     |
| USP 38                      | Heavy Metals (as Pb) <231>             | ~~    | 10 ppm  | < 10 ppm     |
| USP 38                      | pH (5% Solution) <791>                 | 5.0   | 9.2     | 6.98         |
| USP 38                      | Loss on Ignition <733>                 | 40.0  | 52.0    | 50.79%       |
| USP 38                      | Assay, % MgSO <sub>4</sub> (Dry Basis) | 99.0  | 100.5   | 99.95%       |
| Calculated from Assay & LOI | % MgSO <sub>4</sub> (As is Basis)      | 47.52 | 60.3    | 49.18%       |
| USP 38                      | ID, Magnesium <191>                    | ~~    | ~~      | Present      |
| USP 38                      | ID, Sulfate <191>                      | ~~    | ~~      | Present      |

CONTACT:

Quality Assurance Laboratory

John Safi - Chemist

828-452-4784 ext. 31

ANALYST:

SIGNATURE ON FILE