



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

Release Date: 2/10/2018  
CUSTOMER :  
CUST. REF: SHIP DATE:  
PRODUCT: Magnesium Sulfate - USP TRAILER NUMBER:  
SHELF LIFE: 3 Years BILL OF LADING #:  
LOT NUMBER: 0718 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 40                      | Limit of Chloride <221>                | ~~    | 140 ppm | < 140 ppm    |
| USP 40                      | Limit of Iron <241>                    | ~~    | 20 ppm  | < 20 ppm     |
| USP 40                      | Selenium <291>                         | ~~    | 30 ppm  | < 30 ppm     |
| USP 40                      | Heavy Metals (as Pb) <231>             | ~~    | 10 ppm  | < 10 ppm     |
| USP 40                      | pH (5% Solution) <791>                 | 5.0   | 9.2     | 6.22         |
| USP 40                      | Loss on Ignition <733>                 | 40.0  | 52.0    | 51.03%       |
| USP 40                      | Assay, % MgSO <sub>4</sub> (Dry Basis) | 99.0  | 100.5   | 100.07%      |
| Calculated from Assay & LOI | % MgSO <sub>4</sub> (As is Basis)      | 47.52 | 60.3    | 49.00%       |
| USP 40                      | ID, Magnesium <191>                    | ~~    | ~~      | Present      |
| USP 40                      | ID, Sulfate <191>                      | ~~    | ~~      | Present      |

CONTACT:

Quality Assurance Laboratory

Paul Rice - Chemist

ANALYST:

SIGNATURE ON FILE