



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: 3/2/2016

CUSTOMER : _____

CUST. REF: _____ SHIP DATE: _____

PRODUCT: Magnesium Sulfate - USP TRAILER NUMBER: _____

SHELF LIFE: 3 Years BILL OF LADING #: _____

LOT NUMBER: 16061 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 | 8.69 |
| USP 38 | Loss on Ignition <733> | 40.0 | 52.0 | 50.97% |
| USP 38 | Assay, % MgSO ₄ (Dry Basis) | 99.0 | 100.5 | 99.47% |
| Calculated from Assay & LOI | % MgSO ₄ (As is Basis) | 47.52 | 60.3 | 48.77% |
| 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