



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: 12/12/2017

CUSTOMER : _____

CUST. REF: _____ SHIP DATE: _____

PRODUCT: Magnesium Sulfate - USP TRAILER NUMBER: _____

SHELF LIFE: 3 Years BILL OF LADING #: _____

LOT NUMBER: 17345 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 | 6.33 |
| USP 40 | Loss on Ignition <733> | 40.0 | 52.0 | 50.96% |
| USP 40 | Assay, % MgSO ₄ (Dry Basis) | 99.0 | 100.5 | 99.66% |
| Calculated from Assay & LOI | % MgSO ₄ (As is Basis) | 47.52 | 60.3 | 48.87% |
| USP 40 | ID, Magnesium <191> | ~~ | ~~ | Present |
| USP 40 | ID, Sulfate <191> | ~~ | ~~ | Present |

CONTACT:

Quality Assurance Laboratory

Paul Rice - Chemist

ANALYST:

SIGNATURE ON FILE