



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: 9/13/2013

CUSTOMER: _____

CUST. REF: _____ SHIP DATE: _____

PRODUCT: **Magnesium Sulfate - USP** TRAILER NUMBER: _____

SHELF LIFE: 3 Years BILL OF LADING #: _____

LOT NUMBER: **2513** PO NUMBER #: _____

SHIPPER: _____ MANUFACTURED: _____

CUST. SERV.: _____ EXPIRATION: _____

I certify that this material meets all the requirements of the Giles Chemical sales specifications and the United States Pharmacopeia 35. 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 |
| USP35 | Chloride as Cl (%) | ~~ | 0.014 | < 0.014% |
| USP35 | Heavy Metals As Pb (%) | ~~ | 0.001 | < 0.001% |
| USP35 | Ignition Loss (%) | 40.00 | 52.00 | 51.14% |
| USP35 | Iron (ppm) | ~~ | 20.00 | < 20.00 ppm |
| USP35 | MgSO ₄ (Anhydrous wt. %) | 99.00 | 100.50 | 100.02% |
| USP35 | MgSO ₄ (As is basis, %) | 48.30 | 52.00 | 48.81% |
| USP35 | pH 5% Solution | 5.00 | 9.20 | 8.09 |
| USP35 | Selenium (%) | ~~ | 0.003 | < 0.003% |
| USP35 | Mg ²⁺ ID | | | Present |
| USP35 | SO ₄ ²⁻ ID | | | Present |

CONTACT:

Quality Assurance Laboratory

Bryan Elchert - Chemist

828-452-4784 ext. 31

ANALYST:

SIGNATURE ON FILE