



Giles Chemical, a division of Premier Magnesia, LLC. Repacking Facility
102 Commerce Street Waynesville, NC 28786
USP Certificate of Analysis

3/31/2011

CUSTOMER: _____
CUST. REF: _____ SHIP DATE: _____
PRODUCT: **Magnesium Sulfate - USP** TRAILER NUMBER: _____
SHELF LIFE: **3 Years** BILL OF LADING # : _____
LOT NUMBER: **0411** PO NUMBER # : _____
SHIPPER : _____ MANUFACTURED : _____
CUST. SERV. : _____

I, certify that this material meets all the requirements of the Giles Chemical sales specification and the United States Pharmacopeia 33. Periodic testing has shown the samples to be consistently free of volatile organic impurities. Giles Chemical manufactured under the guidelines of Good Manufacturing Practices (GMP)

EPSOM SALT, Magnesium Sulfate - Heptahydrate, USP

| METHOD | TEST | LOWER | UPPER | Test Results |
|--------|---------------------------------------|-------|--------|--------------|
| VISUAL | Appearance | ~~ | ~~ | Clear |
| USP33 | Arsenic (PPM) | ~~ | 3.00 | < 3 ppm |
| USP33 | Chloride as Cl (%) | ~~ | 0.014 | 0.002% |
| USP33 | Heavy Metals As Pb (%) | ~~ | 0.001 | <.001% |
| USP33 | ignition Loss (%) | 40.00 | 52.00 | 51.41% |
| USP33 | Iron | ~~ | 20.00 | 0.13 ppm |
| USP33 | MgSO ₄ (Anhydrous wt. %) | 99.00 | 100.50 | 99.53% |
| USP33 | MgSO ₄ (As is basis, %) | 48.30 | 52.00 | 48.57% |
| USP33 | pH 5% Solution | 5.00 | 9.20 | 6.71 |
| USP33 | Selenium (%) | ~~ | 0.003 | <.003% |
| USP33 | Nickel (%) | ~~ | ~~ | <.005% |
| USP33 | Mg ²⁺ ID | | | Present |
| USP33 | SO ₄ ²⁻ ID | | | Present |

ATTN:

ANALYST:

SIGNATURE ON FILE