



Giles Chemical, a division of Premier Chemicals, LLC.

102 Commerce Street Waynesville, NC 28786

USP Certificate of Analysis

8/17/2010

CUSTOMER: _____

CUST. REF: _____ SHIP DATE: _____

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

SHELF LIFE: **3 Years** BILL OF LADING #: _____

LOT NUMBER: **0810** 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 | <.001% |
| USP33 | Heavy Metals As Pb (%) | ~~ | 0.001 | <.001% |
| USP33 | ignition Loss (%) | 40.00 | 52.00 | 51.38% |
| USP33 | Iron | ~~ | 20.00 | .06 ppm |
| USP33 | MgSO ₄ (Anhydrous wt. %) | 99.00 | 100.50 | 99.65% |
| USP33 | MgSO ₄ (As is basis, %) | 48.30 | 52.00 | 48.63% |
| USP33 | pH 5% Solution | 5.00 | 9.20 | 6.32 |
| USP33 | Selenium (%) | ~~ | 0.003 | <.003% |
| USP33 | Nickel (%) | ~~ | ~~ | <.005% |
| USP33 | Mg ²⁺ ID | | | Present |
| USP33 | SO ₄ ²⁻ ID | | | Present |

ATTN:

ANALYST:

SIGNATURE ON FILE