



## Giles Chemical Corporation USP Certificate of Analysis

CUSTOMER: _____	
CUST. REF: _____	SHIP DATE: _____
PRODUCT: <b>Magnesium Sulfate - USP</b>	TRAILER NUMBER: _____
SHELF LIFE: <b>3 Years</b>	BILL OF LADING # : _____
LOT NUMBER: <b>0206</b>	PO NUMBER # : _____
SHIPPER : _____	MANUFACTURED : _____
CUST. SERV. : _____	EXPIRES : _____

I, certify that this material meets all the requirements of the Giles Chemical Corporation sales specification and the United States Pharmacopeia 28. Periodic testing has shown the samples to be consistently free of volatile organic impurities. Giles Chemical corporation manufactured under the guidelines of Good Manufacturing Practices ( GMP )

### EPSOM SALT, Magnesium Sulfate - Heptahydrate, USP

METHOD	TEST	LOWER	UPPER	TEST RESULTS
VISUAL	Apearance	~~	~~	Clear
USP24	Arsenic ( PPM )	~~	3.00	< 3.0 ppm
ESAP	Boron ( PPM )	~~	15.00	<15.0ppm
USP25	Chloride as Cl (%)	~~	0.014	0.002%
USP26	Heavy Metals As Pb (%)	~~	0.001	< 0.001%
USP25	ignition Loss (%)	40.00	52.00	51.15%
USP26	Iron	~~	20.00	0.15 ppm
USP25	MgSO <sub>4</sub> ( Anhydrous wt. % )	99.00	100.50	99.40%
USP25	MgSO <sub>4</sub> ( As is basis, % )	48.30	52.00	48.56%
USP25	pH 5% Solution	5.00	9.20	6.36
USP25	Selenium ( % )	~~	0.003	< 0.003%
USP25	Mg <sup>2+</sup> ID			Present
USP25	SO <sub>4</sub> <sup>2-</sup> ID			Present

ATTN: \_\_\_\_\_

ANALYST: \_\_\_\_\_

SIGNATURE ON FILE



**Giles Chemical Corporation Repack Facility**  
**USP - Certificate of Analysis**

CUSTOMER: \_\_\_\_\_  
CUST. REF: \_\_\_\_\_ SHIP DATE: \_\_\_\_\_  
PRODUCT: **Magnesium Sulfate - USP** TRAILER NUMBER: \_\_\_\_\_  
SHELF LIFE: **3 Years** BILL OF LADING # : \_\_\_\_\_  
LOT NUMBER: **0206** PO NUMBER # : \_\_\_\_\_  
SHIPPER : \_\_\_\_\_ MANUFACTURED : \_\_\_\_\_  
CUST. SERV. : \_\_\_\_\_ EXPIRES : \_\_\_\_\_

I, certify that this material meets all the requirements of the Giles Chemical Corporation sales specification and the United States Pharmacopeia 28. Periodic testing has shown the samples to be consistently free of volatile organic impurities. Giles Chemical corporation manufactured under the guidelines of Good Manufacturing Practices ( GMP )

**EPSOM SALT, Magnesium Sulfate - Heptahydrate, USP**

METHOD	TEST	LOWER	UPPER	TEST RESULTS
VISUAL	Appearance	~~	~~	Clear
USP24	Arsenic ( PPM )	~~	3.00	< 3.0 ppm
ESAP	Boron ( PPM )	~~	15.00	<15.0ppm
USP25	Chloride as Cl ( % )	~~	0.014	0.002%
USP26	Heavy Metals As Pb ( % )	~~	0.001	< 0.001%
USP25	Ignition Loss ( % )	40.00	52.00	51.15%
USP26	Iron	~~	20.00	0.15 ppm
USP25	MgSO <sub>4</sub> ( Anhydrous wt. % )	99.00	100.50	99.40%
USP25	MgSO <sub>4</sub> ( As is basis, % )	48.30	52.00	48.56%
USP25	pH 5% Solution	5.00	9.20	6.36
USP25	Selenium ( % )	~~	0.003	< 0.003%
USP25	Mg <sup>2+</sup> ID			Present
USP25	SO <sub>4</sub> <sup>2-</sup> ID			Present

ATTN:

ANALYST:

SIGNATURE ON FILE



## Chemical Corporation TECH Certificate of Analysis

CUSTOMER: \_\_\_\_\_

CUST. REF: \_\_\_\_\_ SHIP DATE: \_\_\_\_\_

PRODUCT: Magnesium Sulfate - Tech TRAILER NUMBER: \_\_\_\_\_

SHELF LIFE: 3 Years BILL OF LADING #: \_\_\_\_\_

LOT NUMBER: 0206 PO NUMBER #: \_\_\_\_\_

SHIPPER: \_\_\_\_\_ MANUFACTURED: \_\_\_\_\_

CUST. SERV.: \_\_\_\_\_ EXPIRES: \_\_\_\_\_

I, certify that this material meets all the requirements of the Giles Chemical Corporation sales specification and the United States Pharmacopeia 28. Periodic testing has shown the samples to be consistently free of volatile organic impurities. Giles Chemical corporation manufactured under the guidelines of Good Manufacturing Practices ( GMP )

### EPSOM SALT, Magnesium Sulfate - Heptahydrate, Tech Grade

METHOD	TEST	LOWER	UPPER	TEST RESULTS
VISUAL	Apearance	~~	~~	Clear
USP25	Chloride as Cl (%)	~~	0.014	0.002%
USP25	ignition Loss (%)	40.00	52.00	51.15%
USP25	MgSO <sub>4</sub> ( Anhydrous wt. % )	99.00	100.50	99.40%
USP25	MgSO <sub>4</sub> ( As is basis, % )	48.30	52.00	48.56%
USP25	pH 5% Solution	5.00	9.20	6.36
USP25	Mg <sup>2+</sup> ID			Present
USP25	SO <sub>4</sub> <sup>2-</sup> ID			Present

ATTN:

ANALYST:

SIGNATURE ON FILE



## USP - CERTIFICATE OF ANALYSIS

CUSTOMER: \_\_\_\_\_

CUST. REF: \_\_\_\_\_ SHIP DATE: \_\_\_\_\_

PRODUCT: Magnesium Sulfate - USP TRAILER NUMBER: \_\_\_\_\_

SHELF LIFE: 3 Years BILL OF LADING #: \_\_\_\_\_

LOT NUMBER: 0206 PO NUMBER #: \_\_\_\_\_

SHIPPER: \_\_\_\_\_ MANUFACTURED: \_\_\_\_\_

CUST. SERV.: \_\_\_\_\_ EXPIRES: \_\_\_\_\_

I, certify that this material meets all the requirements of the PQ Corporation sales specification 600546 and the United States Pharmacopeia 25. All organic volatile impurities listed in General Chapter 467, USP 25 NF 20 are below the USP limits.

EPSOM SALT, Magnesium Sulfate - Heptahydrate, USP; CAS Registry #: 10034-99-8

METHOD	TEST	LOWER	UPPER	TEST RESULTS
VISUAL	Appearance	~~	~~	Clear
USP24	Arsenic ( PPM )	~~	3.00	< 3.0 ppm
ESAP	Boron ( PPM )	~~	15.00	<15.0ppm
USP25	Chloride as Cl (%)	~~	0.014	0.002%
USP26	Heavy Metals As Pb (%)	~~	0.001	< 0.001%
USP25	Ignition Loss (%)	40.00	52.00	51.15%
USP26	Iron	~~	20.00	0.15 ppm
USP25	MgSO <sub>4</sub> ( Anhydrous wt. % )	99.00	100.50	99.40%
USP25	MgSO <sub>4</sub> ( As is basis, % )	48.30	52.00	48.56%
USP25	pH 5% Solution	5.00	9.20	6.36
USP25	Selenium ( % )	~~	0.003	< 0.003%
USP25	Mg <sup>2+</sup> ID			Present
USP25	SO <sub>4</sub> <sup>2-</sup> ID			Present

ATTN:

ANALYST:

SIGNATURE ON FILE

PQ - CORPORATION - UTICA, IL

(815) 667-4241



## TECH - CERTIFICATE OF ANALYSIS

CUSTOMER: \_\_\_\_\_

CUST. REF: \_\_\_\_\_

SHIP DATE: \_\_\_\_\_

PRODUCT: Magnesium Sulfate - TECH

TRAILER NUMBER: \_\_\_\_\_

SHELF LIFE: 3 Years

BILL OF LADING #: \_\_\_\_\_

LOT NUMBER: **0206**

PO NUMBER #: \_\_\_\_\_

SHIPPER: \_\_\_\_\_

MANUFACTURED: \_\_\_\_\_

CUST. SERV.: \_\_\_\_\_

EXPIRES: \_\_\_\_\_

I, certify that this material meets all the requirements of the PQ Corporation sales specification 606311

Magnesium Sulfate - Heptahydrate, Agricultural Grade; CAS Registry #: 10034-99-8

METHOD	TEST	LOWER	UPPER	TEST RESULTS
VISUAL	Appearance	~~	~~	Clear
USP25	Chloride as Cl (%)	~~	0.014	0.002%
USP25	Ignition Loss (%)	40.00	52.00	51.15%
USP25	MgSO <sub>4</sub> ( Anhydrous wt. % )	99.00	100.50	99.40%
USP25	MgSO <sub>4</sub> ( As is basis, % )	48.30	52.00	48.56%
USP25	pH 5% Solution	5.00	9.20	6.36

ATTN:

ANALYST:

SIGNATURE ON FILE

PQ - CORPORATION - UTICA, IL

(815) 667-4241



## AGRICULTURAL - CERTIFICATE OF ANALYSIS

CUSTOMER: \_\_\_\_\_

CUST. REF: \_\_\_\_\_

SHIP DATE: \_\_\_\_\_

PRODUCT: Magnesium Sulfate - MAGNAGROW

TRAILER NUMBER: \_\_\_\_\_

SHELF LIFE: 3 Years

BILL OF LADING #: \_\_\_\_\_

LOT NUMBER: **0206**

PO NUMBER #: \_\_\_\_\_

SHIPPER: \_\_\_\_\_

MANUFACTURED: \_\_\_\_\_

CUST. SERV.: \_\_\_\_\_

EXPIRES: \_\_\_\_\_

I, certify that this material meets all the requirements of the PQ Corporation sales specification 606311

Magnesium Sulfate - Heptahydrate, Agricultural Grade; CAS Registry #: 10034-99-8

METHOD	TEST	LOWER	UPPER	TEST RESULTS
VISUAL	Appearance	~~	~~	Clear
USP25	Chloride as Cl (%)	~~	0.014	0.002%
USP25	Ignition Loss (%)	40.00	52.00	51.15%
USP25	MgSO <sub>4</sub> ( Anhydrous wt. % )	99.00	100.50	99.40%
USP25	MgSO <sub>4</sub> ( As is basis, % )	48.30	52.00	48.56%
USP25	pH 5% Solution	5.00	9.20	6.36

ATTN:

ANALYST:

SIGNATURE ON FILE

PQ - CORPORATION - UTICA, IL

(815) 667-4241