



Giles Chemical Corporation USP Certificate of Analysis

CUSTOMER: _____	
CUST. REF: _____	SHIP DATE: _____
PRODUCT: Magnesium Sulfate - USP	TRAILER NUMBER: _____
SHELF LIFE: 3 Years	BILL OF LADING # : _____
LOT NUMBER: 0906	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	0.001%
USP26	Heavy Metals As Pb (%)	~~	0.001	< 0.001%
USP25	Ignition Loss (%)	40.00	52.00	50.86%
USP26	Iron	~~	20.00	0.11 ppm
USP25	MgSO ₄ (Anhydrous wt. %)	99.00	100.50	99.51%
USP25	MgSO ₄ (As is basis, %)	48.30	52.00	48.61%
USP25	pH 5% Solution	5.00	9.20	6.60
USP25	Selenium (%)	~~	0.003	< 0.003%
USP25	Mg ²⁺ ID			Present
USP25	SO ₄ ²⁻ 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: 0906	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	0.001%
USP26	Heavy Metals As Pb (%)	~~	0.001	< 0.001%
USP25	ignition Loss (%)	40.00	52.00	50.86%
USP26	Iron	~~	20.00	0.11 ppm
USP25	MgSO ₄ (Anhydrous wt. %)	99.00	100.50	99.51%
USP25	MgSO ₄ (As is basis, %)	48.30	52.00	48.61%
USP25	pH 5% Solution	5.00	9.20	6.60
USP25	Selenium (%)	~~	0.003	< 0.003%
USP25	Mg ²⁺ ID			Present
USP25	SO ₄ ²⁻ ID			Present

ATTN: _____

ANALYST: _____

SIGNATURE ON FILE



Chemical Corporation TECH Certificate of Analysis

CUSTOMER: _____	
CUST. REF: _____	SHIP DATE: _____
PRODUCT: <u>Magnesium Sulfate - Tech</u>	TRAILER NUMBER: _____
SHELF LIFE: <u>3 Years</u>	BILL OF LADING # : _____
LOT NUMBER: 0906	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	0.001%
USP25	ignition Loss (%)	40.00	52.00	50.86%
USP25	MgSO ₄ (Anhydrous wt. %)	99.00	100.50	99.51%
USP25	MgSO ₄ (As is basis, %)	48.30	52.00	48.61%
USP25	pH 5% Solution	5.00	9.20	6.60
USP25	Mg ²⁺ ID			Present
USP25	SO ₄ ²⁻ 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: 0906 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	0.001%
USP26	Heavy Metals As Pb (%)	~~	0.001	< 0.001%
USP25	Ignition Loss (%)	40.00	52.00	50.86%
USP26	Iron	~~	20.00	0.11 ppm
USP25	MgSO ₄ (Anhydrous wt. %)	99.00	100.50	99.51%
USP25	MgSO ₄ (As is basis, %)	48.30	52.00	48.61%
USP25	pH 5% Solution	5.00	9.20	6.60
USP25	Selenium (%)	~~	0.003	< 0.003%
USP25	Mg ²⁺ ID			Present
USP25	SO ₄ ²⁻ 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: **0906**

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	0.001%
USP25	Ignition Loss (%)	40.00	52.00	50.86%
USP25	MgSO ₄ (Anhydrous wt. %)	99.00	100.50	99.51%
USP25	MgSO ₄ (As is basis, %)	48.30	52.00	48.61%
USP25	pH 5% Solution	5.00	9.20	6.60

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: **0906** 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	0.001%
USP25	Ignition Loss (%)	40.00	52.00	50.86%
USP25	MgSO ₄ (Anhydrous wt. %)	99.00	100.50	99.51%
USP25	MgSO ₄ (As is basis, %)	48.30	52.00	48.61%
USP25	pH 5% Solution	5.00	9.20	6.60

ATTN:

ANALYST:

SIGNATURE ON FILE

PQ - CORPORATION - UTICA, IL

(815) 667-4241