

MID-WEST NUTRITION

Address: 925 W 6th St., Fremont, NE 68025 Tel: 402-721-7347 Fax: 415-329-1920

Certificate of Analysis

Product Name: D-Glucosamine Hydrochloride (40 mesh)

Batch No.: Y1908004

Country of Origin: P. R. China

Manufacture Date: Aug. 04, 2019

Expired Date: Aug. 03, 2021

Non-Irradiated/Non-ETO/Treat by Heat Only

CAS No.: 3416-24-8

Analysis Item	Specification	Result	Method
Assay	98.0% – 102.0%	99.65%	HPLC
Appearance	White crystalline powder	Complies	Visual
Specific Rotation $[\alpha]^{20}_D$	+70.0° – +73.0°	+71.03°	USP41-NF36<781S>
Identification	Positive	Complies	USP41-NF36<197K>
pH	3.0 – 5.0	4.26	USP41-NF36<791>
Powder Size	100% through 40 mesh	Complies	USP #40 Sieve
Bulk Density	≥ 0.50 g/mL	0.55 g/mL	USP41-NF36<616>
Tapped Density	≥ 0.60 g/mL	0.66 g/mL	USP41-NF36<616>
Loss on Drying	≤ 0.5%	0.06%	USP41-NF36<731>
Residue on Ignition	≤ 0.1%	0.06%	USP41-NF36<281>
Sulfate (SO ₄)	≤ 0.24%	Complies	USP41-NF36<221>
Chloride (Cl)	16.2% - 16.7%	16.45%	USP41-NF36<221>
Total Heavy Metals	≤ 10 µg/g	Complies	USP41-NF36<231>
Arsenic (As)	≤ 1.0 µg/g	ND (< 0.1 µg/g)	ICP-MS
Cadmium (Cd)	≤ 1.0 µg/g	ND (< 0.01 µg/g)	ICP-MS
Lead (Pb)	≤ 1.0 µg/g	ND (< 0.1 µg/g)	ICP-MS
Mercury (Hg)	≤ 0.1 µg/g	ND (< 0.01 µg/g)	ICP-MS
Total Plate Count	≤ 1,000 cfu/g	90 cfu/g	USP41-NF36<2021>
Molds and Yeasts	≤ 100 cfu/g	30 cfu/g	USP41-NF36<2021>
<i>Salmonella</i>	Absence	Complies	USP41-NF36<2022>
<i>E. Coli</i>	Absence	Complies	USP41-NF36<2022>
<i>Staphylococcus aureus</i>	Absence	Complies	USP41-NF36<2022>

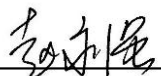
Packing: 25 kg/drum, packing in paper-drums and two sealed plastic-bags inside.

Storage: Store in a well-closed container away from moisture, direct light and heat.

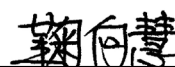
Expired date: Re-test after two years from the manufacturing date.

Conclusion: Conform to Specification.

Quality Assurance officer:



Analyst:





Advanced Botanical Consulting & Testing Inc.

1169 Warner Ave, Tustin, CA 92780, Phone:(714)259-0384 Fax: (714)259-0385


Sample Name: Glucosamine HCl

Item# Lot# Y1908004

Lab# 284307 PO#

Analysis:	Method:	Result:	Spec:
Glucosamine HCL (HPLC)	ALC155B	100.94 %	98.0-102.0 %

Analyzed by:



Chemist

Approved by:



Wendi Wang, PhD, President



Cannabis Analytical
Science Program