



Advanced Botanical Consulting & Testing, Inc.

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Pet Tech Labs

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ATTN: Paul Jonjak/ Brenda
P. O. Number:

Client Sample: Glucosamine
Item#:
Lot#: HK 20181110
Lab #: 250854

Received Date: 12/20/2018

Report Date: 12/28/2018

Analyses

Results

Glucosamine HCl (HPLC)

99.40 %

Method: ALC155B

Analyzed by:

Chemist

Approved by:

Wendi Wang, PhD, President

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.: HK20181110

Country of Origin: P. R. China

Manufacture Date: Nov. 07, 2018

Expired Date: Nov. 06, 2020

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

CAS No.: 3416-24-8

Analysis Item	Specification	Result	Method
Assay	98.0% – 102.0%	99.00%	HPLC
Appearance	White crystalline powder	Complies	Visual
Specific Rotation [α] _D ²⁰	+70.0° – +73.0°	+72.0°	USP40-NF35<781S>
Identification	Positive	Complies	USP40-NF35<197K>
pH	3.0 – 5.0	3.99	USP40-NF35<791>
Powder Size	100% through 40 mesh	Complies	USP #40 Sieve
Bulk Density	≥ 0.70 g/mL	0.80 g/mL	USP40-NF35<616>
Loss on Drying	≤ 0.5%	0.07%	USP40-NF35<731>
Residue on Ignition	≤ 0.1%	0.05%	USP40-NF35<281>
Sulfate (SO ₄)	≤ 0.24%	Complies	USP40-NF35<221>
Chloride (Cl)	16.2% - 16.7%	16.40%	USP40-NF35<221>
Total Heavy Metals	≤ 10 µg/g	Complies	USP40-NF35<231>
Arsenic (As)	≤ 1.0 µg/g	Complies	ICP-MS
Cadmium (Cd)	≤ 1.0 µg/g	Complies	ICP-MS
Lead (Pb)	≤ 1.0 µg/g	Complies	ICP-MS
Mercury (Hg)	≤ 0.1 µg/g	Complies	ICP-MS
Total Plate Count	≤ 1,000 cfu/g	Complies	USP40-NF35<2021>
Molds and Yeasts	≤ 100 cfu/g	Complies	USP40-NF35<2021>
<i>Salmonella</i>	Absence	Complies	USP40-NF35<2022>
<i>E. Coli</i>	Absence	Complies	USP40-NF35<2022>
<i>Staphylococcus aureus</i>	Absence	Complies	USP40-NF35<2022>

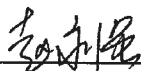
Packing: 25 kg/drum, packing in paper-drums and two sealed plastic-bags inside.

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:

