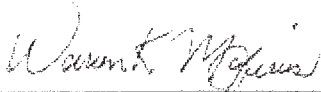


PO #: 16-6469 Ln 2  
 Customer Part #: 100011 Rev 6 4-8-2014  
 Ship Date: 8/16/16  
 Shipment #: 0000007458

<b>Description:</b> Milk Thistle 80% Silymarin Acetone	<b>Lot #:</b> 325160406BTH-AC
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	<u>Standard</u>	<u>Result</u> *
<b><u>Physical Properties</u></b>		
Appearance	Yellow brown powder	Complies
Identification	Positive	Complies
Solvent Used	Acetone	Acetone
Carrier Used / Plant Part	None / Seed	None / Seed
Latin Name	Silybum marianum (L.) Gaertn	Silybum marianum (L.) Gaertn
Bulk Density Loose (gm/cc)	>= 0.3 <= 0.6	0.5
Bulk Density Tap (gm/cc)	>= 0.5 <= 0.8	0.7
Particle size thru # 80 (%)	>= 95	>95
<b><u>Analytical</u></b>		
Assay (Silymarin, %)	>= 80 <= 85	81
Loss on drying (%)	<= 5.0	2.7
ROI (%)	<= 1.0	0.1
Heavy metals (ppm)	<= 10	<10
Lead (ppm)	<= 0.5	<0.5
Arsenic (ppm)	<= 1	<1
Cadmium (ppm)	<= 0.3	<0.3
Mercury (ppm)	<= 0.1	<0.1
Pesticides Residue	Complies	Complies
Residual Solvent Class 1	None detected	Complies
Res. Solvent Class 2, Hexane (ppm)	<= 290	3
Res. Solvent Class 2, Methanol (ppm)	<= 3000	33
Residual Solvent Class 3 (ppm)	<= 5000	1288
<b><u>Microbiological</u></b>		
APC (CFU/gm)	<= 10000	<1000
Yeast/mold (CFU/gm)	<= 1000	<100
E. coli (CFU/gm)	Negative	Negative
Salmonella (25 gm)	Negative	Negative
Coliforms (CFU/gm)	<= 100	<100
S. aureus (CFU/gm)	Negative	Negative
<b><u>Storage Conditions</u></b>		
Manufacture date		April 19, 2016
Expiration date		April 19, 2018
Storage		Cool dry place sealed in light resistant container
Manufactured by		Plant # 325
Country of origin		China
Revision #		Rev 7 05/21/2015



Approved By: \_\_\_\_\_

Warren K. Majerus  
VP Quality Assurance

Date: 8/12/2016

\* Test results based on information supplied by the manufacturer, unless otherwise noted.

\*\* Based on third party testing lab results.

\*\*\* Based on results from Pharmore's sampling protocol.

The information contained in this certificate of analysis is believed to be accurate and is offered in good faith. Pharmore Ingredients, however, cannot assume any guarantee against natural product variations, patent infringement, liabilities or risk involved from the use of this product. Customers' assume all risk and liability with the use of this product.



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### CERTIFICATE OF ANALYSIS

**Product Name:** Silymarin (Milk Thistle P.E.)  
**Extraction Solvent:** Acetone  
**Packing:** 25kg Cardboard Drum  
**Quantity:** 1000kgs  
**Plant Part to be Used:** Seeds

**Latin Name:** Silybum marianum (L.) Gaertn  
**Lot No.:** 20160406BTH-AC  
**Manu. Date:** Apr 19, 2016  
**Expiry Date:** Apr 18, 2019

No.	Test items	Specification and Standards	Results
1.	Appearance	Amorphous Powder	Conforms
2.	Colour	Yellow to Yellowish-Brown	Conforms
3.	Odour	Slight, Specific	Conforms
4.	Solubility - in Water - in Methanol and Acetone	Practically Insoluble Soluble	Conforms Conforms
5.	Identification - TLC, HPLC	To Comply with The Test	Conforms
6.	Sulphated Ash	NMT 0.6%	0.1
7.	Heavy metals - Lead - Atomic Absorption - Arsenic - Atomic Absorption - Cadmium- Atomic Absorption - Mercury- Atomic Absorption	NMT 10 PPM NMT 0.5 PPM NMT 1.0 PPM NMT 0.3 PPM NMT 0.1 PPM	Conforms Conforms Conforms Conforms Conforms
8.	Loss On Drying (2 Hours 105 °C)	NMT 5.0%	2.7%
9.	Bulk Density loose (gm/cc) Bulk Density Tap (gm/cc)	$\geq 0.3 \leq 0.6$ $\geq 0.5 \leq 0.8$	0.45 0.65
10.	Powder size	80Mesh, NLT95%	Conforms
11.	Assay of Silymarin (UV test, per cent, Standard in House)	Min. 80,0	81.0
12.	Assay of Total Silymarin (HPLC, determined as silybin, per cent) - sum of silycrisine and silydianine (HPLC, per cent of the total) - sum of silybin A and silybin B (HPLC, per cent of the total) - sum of isosilybin A and isosilybin B(HPLC, per cent of the total)	From 30,0 to 65,0 From 20,0 to 45,0 From 40,0 to 65,0 From 10,0 to 20,0	41.8 29.4 57.3 13.3
13.	Residual Solvents - N-hexane - Methanol - Acetone - Ethyl Acetate - Ethanol	NMT 290 PPM NMT 3000 PPM NMT 5000 PPM NMT 5000 PPM NMT 5000 PPM	3 33 1288 0 0
14.	Pesticide Residues - Total DDT (Sum of p,p'-DDD,P,P'-DDE,o,p'-DDT and p,p' -DDT) - Aldrin, Endrin, Dieldrin	NMT 0.05 PPM NMT 0.01 PPM	Conforms Conforms
15.	Microbiological Quality (Total viable aerobic count) - Bacteria, CFU/gm, not more than - Moulds ,yeasts and Coliforms CFU/gm, not more than - E.coli, Salmonella, S. aureus, CFU/gm	$10^3$ $10^2$ Absence	Conforms Conforms Conforms

Storage: In Tight, Light-resistant and Dry Place. Avoid Direct Sunshine.

**Analyst:** Xu Xiaolin

**Checker:** Zhong Yingying

Country of Origin: China

Q.C.: Wang Zizhu

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