

January 31, 2019

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CERTIFICATE OF ANALYSIS

AR-19-KK-001274-01

Batch #: EUCAPE-00109541

Sample Identification:

Sample #: 740-2019-01230008
 Description: MSM, Powder, Lot #1901051/32
 Condition: Acceptable
 Date Received: January 23, 2019

K0001: Methylsulfonylmethane (MSM) (GC)		
Method Reference: Internal Method		Theoretical Level
Completed: 01/31/2019	Result	
Methylsulfonylmethane (MSM)	100.6 % (w/w)	98.0-102.0 % (w/w)
K0149: Water by Karl Fischer Titration		
Method Reference: USP <921>		Theoretical Level
Completed: 01/30/2019	Result	
Water	<0.1 %	<0.1 %
K0150: Melting Range		
Method Reference: USP <741>		Theoretical Level
Completed: 01/28/2019	Result	
Melting Point	110 °C	108.5-110.5 °C
Melting range	109-110 °C	
KK03A: Cadmium		
Method Reference: AOAC 993.14 Mod.		Theoretical Level
Completed: 01/31/2019	Result	
Cadmium <i>[Method performed by an outsource lab.]</i>	<0.0009 ppm	<0.005 ppm
KK03B: Lead		
Method Reference: AOAC 993.14 Mod.		Theoretical Level
Completed: 01/31/2019	Result	
Lead <i>[Method performed by an outsource lab. * identifier denotes the analyte was detected below the LOQ but above the LOD. This result is considered an estimated concentration.]</i>	0.003* ppm	<0.01 ppm

KK03D: Arsenic

Method Reference: AOAC 993.14 Mod.
Completed: 01/31/2019

	Result	Theoretical Level
Arsenic <i>[Method performed by an outsource lab. * identifier denotes the analyte was detected below the LOQ but above the LOD. This result is considered an estimated concentration.]</i>	0.0009* ppm	<0.01 ppm

KK633: Methylsulfonylmethane (MSM) Impurities (GC)

Method Reference: USP
Completed: 01/31/2019

	Result	Theoretical Level
Dimethyl Sulfoxide (DMSO) <i>[Area % LOD = 0.009]</i>	<0.009 area%	
Other Impurities	<0.009 area%	
Methylsulfonylmethane (MSM)	100.0 area%	>99.8 area%
Total Impurities	<0.009 area%	

KK759: Identification by Migration Time (GC)

Method Reference: Internal method
Completed: 01/31/2019

	Result	Theoretical Level
MSM ID by RT <i>[The migration time of the peak(s) of the assay preparation compares to that of the reference material(s) (standard(s)) preparation as obtained in the assay.]</i>	Conforms	Conforms

QG00L: Low Level Mercury

Method Reference: EPA 1631E
Completed: 01/31/2019

	Result	Theoretical Level
Mercury (Hg) <i>[Method performed by an outsource lab.]</i>	<0.0004 g/kg	<0.001 ppm

UMCRZ: Enterobacteriaceae - AOAC 2003.01

Method Reference: AOAC 2003.01
Completed: 01/31/2019

	Result	Theoretical Level
Enterobacteriaceae <i>[Method performed by an outsource lab.]</i>	< 10 cfu/g	Absent cfu/g

UMGSH: Salmonella - USP Chapter <62>

Method Reference: U.S. Pharmacopeia Chapter 62
Completed: 01/31/2019

	Result	Theoretical Level
Salmonella <i>[Method performed by an outsource lab.]</i>	Not Detected per 10 g	Absent /10 g

UMI9G: Staphylococcus aureus - USP Chapter <62>

Method Reference: U.S. Pharmacopeia Chapter 62
Completed: 01/31/2019

	Result	Theoretical Level
Staphylococcus aureus <i>[Method performed by an outsource lab.]</i>	Not Detected per 10 g	Absent /10 g

UMMYZ: Total Aerobic Microbial Count - USP Chapter <61>

Method Reference: U.S. Pharmacopeia Chapter 61

Completed: 01/31/2019

Theoretical Level

Total Aerobic Microbial Count
[Method performed by an outsource lab.]

Result
< 10 cfu/g

<10 cfu/g

UMR5L: Moulds - USP Chapter <61>

Method Reference: U.S. Pharmacopeia Chapter 61

Completed: 01/31/2019

Theoretical Level

Moulds
[Method performed by an outsource lab.]

Result
< 10 cfu/g

UMR5L: Yeast - USP Chapter <61>

Method Reference: U.S. Pharmacopeia Chapter 61

Completed: 01/31/2019

Theoretical Level

Yeast
[Method performed by an outsource lab.]

Result
< 10 cfu/g

UMR5L: Yeast & Moulds - USP Chapter <61>

Method Reference: U.S. Pharmacopeia Chapter 61

Completed: 01/31/2019

Theoretical Level

Yeast & Moulds
[Method performed by an outsource lab.]

Result
< 10 cfu/g

<10 cfu/g

UMRU4: Escherichia Coli - USP Chapter <62>

Method Reference: U.S. Pharmacopeia Chapter 62

Completed: 01/31/2019

Theoretical Level

Escherichia Coli
[Method performed by an outsource lab.]

Result
Not Detected per 10 g

Absent /10 g

Results pertain only to the items tested.

All results are reported on an as-is basis unless otherwise stated.

Estimation of uncertainty of measurement is available upon request.

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Indicates results of tests performed in accordance with ISO/IEC 17025:2005 Chemical Scope of Accreditation.



Loreen Jones
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