

February 27, 2019


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**CERTIFICATE OF ANALYSIS**

AR-19-KK-002674-01  
 Batch #: EUCAPE-00110346

**Sample Identification:**

Sample #: 740-2019-02190044  
 Description: MSM, Powder, Lot #1902151  
 Condition: Acceptable  
 Date Received: February 19, 2019

 <b>Method Reference:</b>	<b>Result</b>	<b>Theoretical Level</b>
<b>K0001: Methylsulfonylmethane (MSM) (GC)</b>		
<b>Method Reference:</b> Internal Method		
<b>Completed:</b> 02/21/2019		
Methylsulfonylmethane (MSM)	100.1 % (w/w)	98.0-102.0 % (w/w)
<b>K0149: Water by Karl Fischer Titration</b>		
<b>Method Reference:</b> USP <921>		
<b>Completed:</b> 02/21/2019		
Water	<0.1 %	<0.1 %
<b>K0150: Melting Range</b>		
<b>Method Reference:</b> USP <741>		
<b>Completed:</b> 02/25/2019		
Melting Point	110 °C	108.5-110.5 °C
Melting range	109-110 °C	
<b>KK03A: Cadmium</b>		
<b>Method Reference:</b> AOAC 993.14 Mod.		
<b>Completed:</b> 02/26/2019		
Cadmium <i>[Method performed by an outsource lab.]</i>	<0.001 ppm	<0.005 ppm
<b>KK03B: Lead</b>		
<b>Method Reference:</b> AOAC 993.14 Mod.		
<b>Completed:</b> 02/26/2019		
Lead <i>[Method performed by an outsource lab. ∴ *=&lt; LOQ]</i>	0.002* ppm	<0.01 ppm

**KK03D: Arsenic**

**Method Reference:** AOAC 993.14 Mod.  
**Completed:** 02/26/2019

	<b>Result</b>	<b>Theoretical Level</b>
Arsenic <i>[Method performed by an outsource lab.]</i>	0.0008* ppm	<0.01 ppm

**KK633: Methylsulfonylmethane (MSM) Impurities (GC)**

**Method Reference:** USP  
**Completed:** 02/21/2019

	<b>Result</b>	<b>Theoretical Level</b>
Dimethyl Sulfoxide (DMSO) <i>[Area % LOD = 0.008]</i>	<0.008 area%	
Other Impurities	<0.008 area%	
Methylsulfonylmethane (MSM)	100.0 area%	>99.8 area%
Total Impurities	<0.008 area%	

**KK759: Identification by Migration Time (GC)**

**Method Reference:** Internal method  
**Completed:** 02/21/2019

	<b>Result</b>	<b>Theoretical Level</b>
MSM ID by MT <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:** 02/26/2019

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

**UMCRZ: Enterobacteriaceae - AOAC 2003.01**

**Method Reference:** AOAC 2003.01  
**Completed:** 02/27/2019

	<b>Result</b>	<b>Theoretical Level</b>
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:** 02/27/2019

	<b>Result</b>	<b>Theoretical Level</b>
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:** 02/27/2019

	<b>Result</b>	<b>Theoretical Level</b>
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:** 02/27/2019

	<b>Result</b>	<b>Theoretical Level</b>
Total Aerobic Microbial Count <i>[Method performed by an outsource lab.]</i>	<10 cfu/g	<10 cfu/g

**UMR5L: Moulds - USP Chapter <61>**

**Method Reference:** U.S. Pharmacopeia Chapter 61  
**Completed:** 02/27/2019

**Theoretical Level**

Moulds	<b>Result</b> <10 cfu/g	
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**UMR5L: Yeast - USP Chapter <61>**

**Method Reference:** U.S. Pharmacopeia Chapter 61  
**Completed:** 02/27/2019

**Theoretical Level**

Yeast	<b>Result</b> <10 cfu/g	
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**UMR5L: Yeast & Moulds - USP Chapter <61>**

**Method Reference:** U.S. Pharmacopeia Chapter 61  
**Completed:** 02/27/2019

**Theoretical Level**

Yeast & Moulds <i>[Method performed by an outsource lab.]</i>	<b>Result</b> <10 cfu/g	<b>Theoretical Level</b> <10 cfu/g
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**UMRU4: Escherichia Coli - USP Chapter <62>**

**Method Reference:** U.S. Pharmacopeia Chapter 62  
**Completed:** 02/27/2019

**Theoretical Level**

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



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