Bergstrom Nutrition

OptiMSM® Certificate of Analysis

SKU NUMBERS: 20020 **LOT NUMBER:** 1902251 **MFG DATE:** 2/12/2019 **EXPIRATION DATE:** 2/12/2024

PRODUCT: METHYLSULFONYLMETHANE, (Dimethyl Sulfone, Methyl Sulfone, MSM, $DMSO_2$)

MANUFACTURER: Bergstrom Nutrition, 1000 West 8th Street, Vancouver, WA 98660 – (360)693-1883 – Country of Origin: USA

EXCIPIENT: None **QUANTITY:** 0% by weight

PHYSICAL DESCRIPTION: White flake

CHEMICAL ABSTRACTS REGISTRY NUMBER: 67-71-0 **MOLECULAR WEIGHT:** 94.13 **PERCENT SULFUR:** 34.1%

PHYSICOCHEMICAL ANALYSIS	METHOD	SPECIFICATION	LOT RESULT
VOLATILE PURITY:	MSM – GC/FID [1, 2]	>99.8%	99.9 %
ASSAY	MSM-GC/FID[1]	98.0 – 102.0%	98.5 %
IDENTITY	USP Method B	Pass	Pass
MELTING POINT:	USP/NF <741>	109.5° C ± 1.0° C	110.0 °C
WATER CONTENT:	USP/NF <921la>	< 0.1%	<0.1 %
DMSO CONTENT:	MSM – GC/FID[1, 2]	< 0.05%	<0.05 %
INDIVIDUAL IMPURITY	GC/FID[1]	NMT 0.05%	<0.05 %
PARTICLE SIZE: 12 [3]	USP/NF <786l>	NLT 98% THROUGH	99.2 %
BULK DENSITY:	USP/NF <616l>	NLT 0.68 g/ml	0.69 g/ml
TAPPED DENSITY:	USP/NF <616l>	NLT 0.78 g/ml	0.82 g/ml
MICROBIOLOGICAL ANALYSIS	**METHOD**	**SPECIFICATION**	**LOT RESULT**
Total Aerobic Microbial Count:	USP<61>	<10cfu/g	<10 cfu/g
Total Yeast and Mold Counts:	USP<61>	<10cfu/g	<10 cfu/g
Enterobacteria:	USP<62>	Absent	Absent
Escherichia coli:	USP<62>	Absent	Absent
Salmonella:	USP<62>	Absent	Absent
Staphylococcus aureus:	USP<62>	Absent	Absent
METALS ANALYSIS	**METHOD**	**SPECIFICATION**	**LOT RESULT**
As (Arsenic):	EPA 200.8 - ICPMS[1, 2]	<0.01 ppm	<0.01 ppm
Cd (Cadmium):	EPA 200.8 - ICPMS[1, 2]	<0.005 ppm	<0.005 ppm
Hg (Mercury):	EPA 7471A[1, 2]	<0.001 ppm	<0.001 ppm
Pb (Lead):	EPA 200.8 – ICPMS[1, 2]	<0.01 ppm	<0.01 ppm

NOTE: 1. Third party laboratory validated method
2. Additional third party validation method may be used in place of listed method.
3. U.S. Sieve Designation

Manufacturer Statement

The methylsulfonylmethane (MSM) used in the manufacture of this product complies with the requirements of the United States Pharmacopeia / National Formulary. The manufacturing process takes place in the USA in a facility that is in full compliance with the FDA cGMP requirements and is ISO 9001 & FSSC 22000 certified. Bergstrom Nutrition guarantees OptiMSM is non–GMO as defined by the European Union in Article 2.2 of Directive 2001/18/EC and Article 2.5 of Regulation (EC)1829/2003 and is in compliance with Regulation (EC) 1830/2003 regarding traceability and labeling of GMOs and food derived thereof. OptiMSM is Kosher certified through the Orthodox Union and Halal certified by the Islamic Food and Nutrition Council of America and is GRAS.

Prepared By: _____ **Date:** 3-1-2019

Approved By: _____ **Date:** 3/1/2019

eurofins | Supplement Analysis Center

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February 28, 2019

Sarah Smart
Bergstrom Nutrition
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CERTIFICATE OF ANALYSIS

AR-19-KK-002798-01
Batch #: EUCAPE-00110415

Sample Identification:

Sample #: 740-2019-02210034
Description: MSM, Powder, Lot #1902251
Condition: Acceptable
Date Received: February 21, 2019

K0001: Methylsulfonylmethane (MSM) (GC)

Method Reference: Internal Method
Completed: 02/28/2019

	Result	Theoretical Level
Methylsulfonylmethane (MSM)	98.5 % (w/w)	98.0-102.0 % (w/w)

K0149: Water by Karl Fischer Titration

Method Reference: USP <921>
Completed: 02/26/2019

	Result	Theoretical Level
Water	<0.1 %	<0.1 %

K0150: Melting Range

Method Reference: USP <741>
Completed: 02/25/2019

	Result	Theoretical Level
Melting Point	110 °C	108.5-110.5 °c
Melting range	109-110 °C	

KK03A: Cadmium

Method Reference: AOAC 993.14 Mod.
Completed: 02/28/2019

	Result	Theoretical Level
Cadmium *[Method performed by an outsource lab.]*	<0.0009 ppm	<0.005 ppm

KK03B: Lead

Method Reference: AOAC 993.14 Mod.
Completed: 02/28/2019

	Result	Theoretical Level
Lead *[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.]*	0.001* ppm	<0.01 ppm

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KK03D: Arsenic
Method Reference: AOAC 993.14 Mod.
Completed: 02/28/2019

	Result	Theoretical Level
Arsenic *[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.]*	0.0007* ppm	<0.01 ppm

KK633: Methylsulfonylmethane (MSM) Impurities (GC)
Method Reference: USP
Completed: 02/28/2019

	Result	Theoretical Level
Dimethyl Sulfoxide (DMSO) *[Area % LOD = 0.007]*	<0.007 area%	
Other Impurities	<0.007 area%	
Methylsulfonylmethane (MSM)	99.99 area%	>99.8 area%
Total Impurities	<0.007 area%	

KK759: Identification by Migration Time (GC)
Method Reference: Internal method
Completed: 02/28/2019

	Result	Theoretical Level
MSM ID by MT *[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.]*	Conforms	Conforms

QG00L: Low Level Mercury
Method Reference: EPA 1631E
Completed: 02/28/2019

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

UMCRZ: Enterobacteriaceae - AOAC 2003.01
Method Reference: AOAC 2003.01
Completed: 02/28/2019

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

UMGSH: Salmonella - USP Chapter <62>
Method Reference: U.S. Pharmacopeia Chapter 62
Completed: 02/28/2019

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

UMI9G: Staphylococcus aureus - USP Chapter <62>
Method Reference: U.S. Pharmacopeia Chapter 62
Completed: 02/28/2019

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

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UMMYZ: Total Aerobic Microbial Count - USP Chapter <61>
Method Reference: U.S. Pharmacopeia Chapter 61
Completed: 02/28/2019

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

UMR5L: Moulds - USP Chapter <61>
Method Reference: U.S. Pharmacopeia Chapter 61
Completed: 02/28/2019

	Result	Theoretical Level
Moulds	< 10 cfu/g	

UMR5L: Yeast - USP Chapter <61>
Method Reference: U.S. Pharmacopeia Chapter 61
Completed: 02/28/2019

	Result	Theoretical Level
Yeast	< 10 cfu/g	

UMR5L: Yeast & Moulds - USP Chapter <61>
Method Reference: U.S. Pharmacopeia Chapter 61
Completed: 02/28/2019

	Result	Theoretical Level
Yeast & Moulds *[Method performed by an outsource lab.]*	< 10 cfu/g	<10 cfu/g

UMRU4: Escherichia Coli - USP Chapter <62>
Method Reference: U.S. Pharmacopeia Chapter 62
Completed: 02/28/2019

	Result	Theoretical Level
Escherichia Coli *[Method performed by an outsource lab.]*	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.
Results shall not be reproduced except in full without written permission from Eurofins Scientific, Inc.
Indicates results of tests performed in accordance with *ISO/IEC 17025:2005 Chemical Scope of Accreditation.*

ACCREDITED
TESTING CERT #2942.01

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Associate Scientist

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