



40 West Louise Ave., Salt Lake City, UT 84115  
 Phone: (801) 485-1800 Fax: (801) 484-9211  
 Email: utlab@advancedlabsinc.com  
**FDA Registration #3006423386**

If you liked our service, please tell a friend. If you didn't, please tell us!

## Test Certificate

Description: Fulvic Minerals Concentrate X10  
 Sample ID: MSM-1-02919B  
 Lot No: MSM-1-02919B  
 Part Code:  
 Location:  
 PO No:  
 Received: 1/31/2019

Client: Morningstar Minerals  
 P.O. Box 9  
 Farmington, NM 87499

Lab No: 165529-01  
 Completed: 2/11/2019

Analysis	Result	Per Unit	Method
Aluminum	1.042	ppm	ICP-OES USP <730>
Antimony	2.107	ppm	ICP-OES USP <730>
Arsenic	0.040	ppm	ICP-MS USP <730>
Barium	1.094	ppm	ICP-OES USP <730>
Beryllium	0.965	ppm	ICP-OES USP <730>
Bismuth	2.223	ppm	ICP-OES USP <730>
Boron	6.292	ppm	ICP-OES USP <730>
Cadmium	0.002	ppm	ICP-MS USP <730>
Calcium	1,698	ppm	ICP-OES USP <730>
Cerium	<0.001	ppm	ICP-MS USP <730>
Cesium	0.006	ppm	ICP-MS USP <730>
†Chloride	330	ppm	USP <221> Titration
Chromium	0.717	ppm	ICP-OES USP <730>
Cobalt	1.643	ppm	ICP-OES USP <730>
Copper	1.430	ppm	ICP-OES USP <730>
Dysprosium	<0.001	ppm	ICP-MS USP <730>
Erbium	<0.001	ppm	ICP-MS USP <730>
Europium	<0.001	ppm	ICP-MS USP <730>
†Fluoride	1.367	ppm	AOAC 939.11

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Results Approved By:   
 Alisa Farnsworth-Quality Technician

Dated: 2/11/2019

Tests marked with † were done at Atlas Bioscience Labs, LLC, a joint venture with Advanced Laboratories. - 1775 S. Pantano Rd - Ste #110, Tucson, AZ 85710

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Gadolinium	<0.001	ppm	ICP-MS USP <730>
Gallium	0.230	ppm	ICP-MS USP <730>
Germanium	0.016	ppm	ICP-MS USP <730>
Gold	<0.5	ppm	ICP-OES USP <730>
Hafnium	0.039	ppm	ICP-MS USP <730>
Holmium	<0.001	ppm	ICP-MS USP <730>
Indium	<0.001	ppm	ICP-MS USP <730>
†Iodine	1.342	ppm	Titration
Iridium	<0.001	ppm	ICP-MS USP <730>
Iron	0.591	ppm	ICP-OES USP <730>
Lanthanum	1.215	ppm	ICP-OES USP <730>
Lead	0.003	ppm	ICP-MS USP <730>
Lithium	1.667	ppm	ICP-OES USP <730>
Lutetium	<0.001	ppm	ICP-MS USP <730>
Magnesium	273.9	ppm	ICP-OES USP <730>
Manganese	1.304	ppm	ICP-OES USP <730>
Mercury	0.013	ppm	ICP-MS USP <730>
Molybdenum	2.361	ppm	ICP-OES USP <730>
Neodymium	<0.001	ppm	ICP-MS USP <730>

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Nickel	1.986	ppm	ICP-OES USP <730>
Niobium	1.824	ppm	ICP-OES USP <730>
Osmium	<0.001	ppm	ICP-MS USP <730>
Palladium	0.037	ppm	ICP-MS USP <730>
Phosphorus	3.461	ppm	ICP-OES USP <730>
Platinum	0.001	ppm	ICP-MS USP <730>
Potassium	24.53	ppm	ICP-OES USP <730>
Praseodymium	<0.001	ppm	ICP-MS USP <730>
Rhenium	0.001	ppm	ICP-MS USP <730>
Rhodium	0.003	ppm	ICP-MS USP <730>
Rubidium	0.123	ppm	ICP-MS USP <730>
Ruthenium	0.006	ppm	ICP-MS USP <730>
Samarium	<0.001	ppm	ICP-MS USP <730>
Scandium	0.031	ppm	ICP-MS USP <730>
Selenium	2.921	ppm	ICP-OES USP <730>
Silicon	7.429	ppm	ICP-OES USP <730>
Silver	1.465	ppm	ICP-OES USP <730>
Sodium	315.2	ppm	ICP-OES USP <730>
Strontium	2.582	ppm	ICP-OES USP <730>

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Sulfur	1,749	ppm	ICP-OES USP <730>
Tantalum	<0.001	ppm	ICP-MS USP <730>
Tellurium	5.762	ppm	ICP-OES USP <730>
Terbium	<0.001	ppm	ICP-MS USP <730>
Thallium	<0.5	ppm	ICP-OES USP <730>
Thorium	0.633	ppm	ICP-OES USP <730>
Thulium	<0.001	ppm	ICP-MS USP <730>
Tin	0.013	ppm	ICP-MS USP <730>
Titanium	1.515	ppm	ICP-OES USP <730>
Tungsten	1.337	ppm	ICP-OES USP <730>
Vanadium	0.990	ppm	ICP-OES USP <730>
Ytterbium	<0.001	ppm	ICP-MS USP <730>
Yttrium	0.572	ppm	ICP-OES USP <730>
Zinc	1.791	ppm	ICP-OES USP <730>
Zirconium	<0.5	ppm	ICP-OES USP <730>
†Fulvic Acid	12.02	%	Modified Larry G. Butler

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Fulvic Acid analyzed as total vanillin-catechin conjugates using modified methodology of Larry G. Butler et al., "Vanillin Assay for Proanthocyanidins [Condensed Tannins]: Modification of the solvent for Estimation of the degree of Polymerization" as published in J. Agric. Food Chem., 30, 1087-1089, vanillin reagent prepared as 750ml with 15g ammonium iron sulfate in n-butanol/hydrochloric acid (95:5). For the determination of total catechin on 2% sol of initial extract in a 50ml volumetric flask containing 25ml of methanol; 2.5ml of Vanillin reagent added and heated to 95°C for 40mins after cooling diluted to volume with methanol, the absorbance of both the standard solutions and sample is measured at 550nm. Authentic reference material obtained from Sigma-Aldrich.

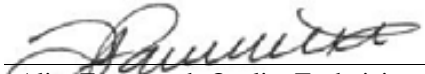
Chloride <221> titration procedure with AgNO3 precipitation reaction.

Fluoride AOAC 939.11.

Iodine analysis performed by sodium 0.1N thiosulfate titration of acidified digest centrifuged supernatant. Starch indicator solution was used to determine the end-point of the titration. Reagents employed were obtained from Sigma-Aldrich.

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