



FulvicXcell Products Ltd.

1352 Industrial Road, Unit 1 | West Kelowna, British Columbia, Canada, V1Z 1G5

W: www.fulvicxcell.com | E: info@fulvicxcell.com

File No.: 350001_01

Date Created: April 02, 2019

Certificate of Analysis

PRODUCT INFORMATION

Product Name	Fulvic Powder
Product Code	E18NP
Product Lot Number	19B28-T004-E18NP
Manufacturer Date	February 28, 2019
Manufacturer	FulvicXcell Products Ltd.
Location of Production Facility	West Kelowna, British Columbia, Canada
Origin of Humic Substances	Alberta, Canada
Product Matrix	Powder

Composition (Ingredients; % w/w)	<p>≥90% OXIDIZED LIGNITE (CAS: 129521-66-0; aqueous extracts incl. fulvic acid mineral complexes)</p> <p>≤10% RO WATER (CAS: 7732-18-5)</p>
Storage Conditions	Ambient—room temperature (10 – 25 C), do not freeze; open in dry location; avoid prolonged exposure to direct sunlight; refrigerate and reseal after opening

QUALITY & PURITY

Physical Attributes

Parameter	Test Method	Tolerance	Result
Appearance	Organoleptic	Dark brown to black, shiny to dull, fine powder	Within Tolerance
pH	Electrometry	5.25 – 6.75	6.03
Moisture	Lamar Method (AOAC Vol. 97)	≤10%	1.21%
Hydrophobic Fulvic Acid	Lamar Method (AOAC Vol. 97)	None	38.05%

Microbiological Contaminants

Parameter	Test Method	Tolerance*	Unit	Result	Unit
Aerobic Plate Count	MFHPB-18	10,000	CFU/g	400	CFU/g
Total Coliforms	MFHPB-19	100	CFU/g	<2	MPN/g
E. coli	MFHPB-19	Not Detected	Per 10 g	<2	MPN/g
Salmonella	MFHPB-20	Not Detected	Per 10 g	Negative	Per 25 g
Staphylococcus aureus	MFHPB-21	Not Detected	Per 10 g	<25	CFU/g
Mold & Yeast (combined)	MFHPB-22	1,000	CFU/g	<5	CFU/g



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Heavy Metal Impurities

Parameter	Test Method	Tolerance*	Unit	Result	Unit
Arsenic	ICP-OES/ICP-MS	5.0	mg/kg	2.08	mg/kg
Cadmium	ICP-OES/ICP-MS	0.3	mg/kg	<0.040	mg/kg
Lead	ICP-OES/ICP-MS	10.0	mg/kg	0.82	mg/kg
Mercury	ICP-OES/ICP-MS	0.2	mg/kg	0.0038	mg/kg

Mineral Content

Parameter	Test Method	Result	Unit
Aluminum	EPA 6020B (ICP-MS)	856	mg/kg
Antimony	EPA 6020B (ICP-MS)	0.34	mg/kg
Barium	EPA 6020B (ICP-MS)	15.6	mg/kg
Beryllium	EPA 6020B (ICP-MS)	0.14	mg/kg
Bismuth	EPA 6020B (ICP-MS)	<0.10	mg/kg
Boron	EPA 6020B (ICP-MS)	124	mg/kg
Calcium	EPA 6020B (ICP-MS)	3360	mg/kg
Chromium	EPA 6020B (ICP-MS)	3.2	mg/kg
Cobalt	EPA 6020B (ICP-MS)	2.2	mg/kg
Copper	EPA 6020B (ICP-MS)	7.62	mg/kg
Iron	EPA 6020B (ICP-MS)	445	mg/kg
Lithium	EPA 6020B (ICP-MS)	15.4	mg/kg
Magnesium	EPA 6020B (ICP-MS)	610	mg/kg
Manganese	EPA 6020B (ICP-MS)	55.4	mg/kg
Molybdenum	EPA 6020B (ICP-MS)	2.89	mg/kg
Nickel	EPA 6020B (ICP-MS)	7.8	mg/kg
Phosphorus	EPA 6020B (ICP-MS)	11	mg/kg
Potassium	EPA 6020B (ICP-MS)	212000	mg/kg
Selenium	EPA 6020B (ICP-MS)	0.77	mg/kg
Silver	EPA 6020B (ICP-MS)	<0.10	mg/kg
Sodium	EPA 6020B (ICP-MS)	15500	mg/kg
Strontium	EPA 6020B (ICP-MS)	23.7	mg/kg



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Mineral Content (Cont.)

Parameter	Test Method	Result	Unit
Sulfur	EPA 6020B (ICP-MS)	60300	mg/kg
Tellurium	EPA 6020B (ICP-MS)	<0.10	mg/kg
Thallium	EPA 6020B (ICP-MS)	<0.10	mg/kg
Thorium	EPA 6020B (ICP-MS)	<0.50	mg/kg
Tin	EPA 6020B (ICP-MS)	<0.20	mg/kg
Titanium	EPA 6020B (ICP-MS)	66.9	mg/kg
Tungsten	EPA 6020B (ICP-MS)	0.4	mg/kg
Uranium	EPA 6020B (ICP-MS)	0.339	mg/kg
Vanadium	EPA 6020B (ICP-MS)	5.3	mg/kg
Zinc	EPA 6020B (ICP-MS)	8	mg/kg
Zirconium	EPA 6020B (ICP-MS)	29.1	mg/kg

ADDITIONAL INFORMATION

Footnotes

*Tolerances for *Microbiological Contaminants* and *Heavy Metal Impurities* based on the NSF International Standards for Dietary Supplements acceptable limits for microbiological and heavy metal contaminants in raw materials.

Glossary

CFU = Colony Forming Unit
EPA = (United States) Environmental Protection Agency
MFHPB = Microbiological Food Health Protection Branch (considered Health Canada’s “HPB” methods)
MPN = Most Probable Number

General Comments

Directions for Use: For non-chlorinated aqueous solutions, slowly incorporate (scatter) powder while mixing to prevent clumping; material is mildly hygroscopic—avoid handling in high humidity environments.



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PRODUCT RELEASE

Conformance to Tolerances

Parameters (Specifications) **PASS**

Approval

Approved By

Signature

Approved By

Signature

Chancellor Smith
Production Manager


Chancellor Smith (Apr 3, 2019)

Jeffrey Karr
Technical Manager


Jeffrey Karr (Apr 2, 2019)