

Certificate of Analysis

Eurofins BioDiagnostics, Inc.

Sample Name:	Premium Purified Water infused with Hemp Extract	Eurofins Sample:	8562280
Project ID	EUROFINS-20190621-0707	Receipt Date	18-Jun-2019
PO Number	CVD	Receipt Condition	Ambient temperature
Lot Number	119090814	Login Date	21-Jun-2019
Sample Serving Size		Date Started	23-Jun-2019

Analysis

Result

Elements by ICP Mass Spectrometry

Arsenic	<10.0 ppb
Cadmium	<5.00 ppb
Lead	<5.00 ppb
Mercury	<5.00 ppb

Multi-Residue Analysis for hemp products - 60+ compounds

Matrix Type - To Determine Limit of Quantification (LOQ)

Spices - Botanicals - and other
Specialty Samples

Abamectin	<0.05 mg/kg
Aldicarb	<0.05 mg/kg
Aldicarb sulfone (Aldoxycarb)	<0.05 mg/kg
Aldicarb sulfoxide	<0.05 mg/kg
Azoxystrobin	<0.05 mg/kg
Bifenazate	<0.05 mg/kg
Bifenthrin	<0.05 mg/kg
Carbaryl	<0.05 mg/kg
Carbofuran	<0.05 mg/kg
Carbofuran-3-hydroxy-	<0.05 mg/kg
Chlorantraniliprole	<0.05 mg/kg
Chlordane, cis-	<0.05 mg/kg
Chlordane, trans-	<0.05 mg/kg
Chlorfenapyr	<0.05 mg/kg
Chlorpyrifos	<0.05 mg/kg
Coumaphos	<0.05 mg/kg
Cyfluthrin	<0.05 mg/kg
Cypermethrin	<0.05 mg/kg
Cyproconazole (2 diastereoisomers)	<0.05 mg/kg
Cyprodinil	<0.05 mg/kg
Dichlorvos	<0.05 mg/kg
Diclobutrazol	<0.05 mg/kg
Dipropetryn	<0.05 mg/kg
Disulfoton	<0.05 mg/kg
Endosulfan I (alpha-isomer)	<0.05 mg/kg
Endosulfan II (beta-isomer)	<0.05 mg/kg
Endosulfan sulfate	<0.05 mg/kg

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Epoxiconazole	<0.05 mg/kg
Ethiofencarb	<0.05 mg/kg
Etofenprox	<0.05 mg/kg
Etoxazole	<0.05 mg/kg
Fenoxycarb	<0.05 mg/kg
Fenpropathrin	<0.05 mg/kg
Fenvalerate/Esfenvalerate (sum of isomers)	<0.05 mg/kg
Fipronil	<0.05 mg/kg
Fipronil desulfinyl	<0.05 mg/kg
Fipronil sulfone	<0.05 mg/kg
Imazalil	<0.05 mg/kg
Imidacloprid	<0.05 mg/kg
Malathion	<0.05 mg/kg
Methiocarb	<0.05 mg/kg
Methiocarb sulfone	<0.05 mg/kg
Methiocarb sulfoxide	<0.05 mg/kg
Methomyl	<0.05 mg/kg
Metolachlor	<0.05 mg/kg
Mevinphos (E- and Z-isomers)	<0.05 mg/kg
Myclobutanil	<0.05 mg/kg
Naled (Dibrom)	<0.05 mg/kg
Paclobutrazol	<0.05 mg/kg
Permethrin (sum of isomers)	<0.05 mg/kg
Propoxur	<0.05 mg/kg
Pyrethrum (total)	<0.50 mg/kg
Spinetoram (spinosyns J and L)	<0.05 mg/kg
Spinosad (spinosyns A and D)	<0.05 mg/kg
Spirodiclofen	<0.05 mg/kg
Spiromesifen	<0.05 mg/kg
Spiromesifen enol	<0.05 mg/kg
Spirotetramat	<0.05 mg/kg
Spiroxamine (2 diastereoisomers)	<0.05 mg/kg
Tebuconazole	<0.05 mg/kg
Thiabendazole	<0.05 mg/kg

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Analysis	Result
Multi-Residue Analysis for hemp products - 60+ compounds	
Thiabendazole-5-hydroxy-	<0.05 mg/kg
Thiacloprid	<0.05 mg/kg
Trifloxystrobin	<0.05 mg/kg

Analysis	LOQ	Limit	Result	Pass/Fail
Residual Solvents - Class 2 Mix C, Class 3 DMSO (Nonvolatile Solvents) *				
2-Methoxyethanol	50 ppm	50 ppm	<50.0 ppm	Pass
2-Ethoxyethanol	160 ppm	160 ppm	<160 ppm	Pass
N,N-Dimethylformamide	880 ppm	880 ppm	<880 ppm	Pass
N,N-Dimethylacetamide	1090 ppm	1090 ppm	<1090 ppm	Pass
Dimethyl Sulfoxide	250 ppm	250 ppm	<250 ppm	Pass
Ethylene Glycol	620 ppm	620 ppm	<620 ppm	Pass
N-Methylpyrrolidone	530 ppm	530 ppm	<530 ppm	Pass
Formamide	220 ppm	220 ppm	<220 ppm	Pass
Sulfolane	160 ppm	160 ppm	<160 ppm	Pass
Residual Solvents - Class 3, Acids Only *				
Acetic Acid	200 ppm		<200 ppm	
Formic Acid	200 ppm		<200 ppm	

Method References	Testing Location
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Elements by ICP Mass Spectrometry (ICP_MS_S)

Food Integrity Innovation-Madison

Official Methods of Analysis, Method 2011.19 and 993.14, AOAC INTERNATIONAL, (Modified).
Pequette, L.H., Szabo, A., Thompson, J.J., "Simultaneous Determination of Chromium, Selenium, and Molybdenum in Nutritional Products by Inductively Coupled Plasma/Mass Spectrometry: Single-Laboratory Validation," Journal of AOAC International, 94(4): 1240 - 1252 (2011).

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Method References	Testing Location
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Multi-Residue Analysis for hemp products - 60+ compounds (PEST_HEMP)	Food Integ. Innovation-Greenfield
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Official Methods of Analysis, AOAC Official Method 2007.01, Pesticide Residues in Foods by Acetonitrile Extraction and Partitioning with Magnesium Sulfate, AOAC INTERNATIONAL (modified).

CEN Standard Method EN 15662: Food of plant origin - Determination of pesticide residues using GC-MS and/or LC-MS/MS following acetonitrile extraction/partitioning and clean-up by dispersive SPE - QuEChERS method.

List of the tested pesticides and their limits of quantification (LOQs) are available upon request.

Residual Solvents - Class 2 Mix C, Class 3 DMSO (Nonvolatile Solvents) (USPR_DI_S)	Food Integrity Innovation-Madison
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United States Pharmacopeia, 39th Rev. - National Formulary 34th Ed., Method <467>, USP Convention, Inc., Rockville, MD (2016). (Modified).

Residual Solvents - Class 3, Acids Only (USPR_ACD_S)	Food Integrity Innovation-Madison
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[1] United States Pharmacopeia, 39th Rev. - National Formulary 34th Ed., Method <467>, USP Convention, Inc., Rockville, MD (2015). (Modified)

[2] Zhou, D., Hou, Q., Liu, W., Ren, X., "Rapid determination of formic and acetic acids in biomass hydrolysate by headspace gas chromatography," *Journal of Industrial and Engineering Chemistry*, 47:281-287 (2017).

Testing Location(s)	Released on Behalf of Eurofins by
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Food Integ. Innovation-Greenfield	Karelyn Koehn - Manager
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Eurofins Food Chemistry Testing US, Inc.
671 S. Meridian Road
Greenfield IN 46140
800-675-8375



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Food Integrity Innovation-Madison	Edward Ladwig - Director
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