

CERTIFICATE OF ANALYSIS

PRODUCT NAME:	Organic CBD Tincture - Natural
PRODUCT STRENGTH:	2250mg
TINCTURE BATCH:	230612B
BEST BY DATE:	6/12/2025
HEMP EXTRACT LOT:	230222C

Physical Attributes

Test	Method	Specification	Results
Color	Joy Internal	Golden to Amber	PASS
Odor	Joy Internal	Characteristic - Olive and Hemp	PASS
Appearance	Joy Internal	Golden to Amber oil in brown glass bottle with dropper.	PASS
Primary Package Eval.	Joy Internal	Container clean and free of filth. Container caps tight and shrink bands intact	PASS
Secondary Package Eval.	Joy Internal	Labeling Compliance Checked, Cartons sturdy and clean. Sufficient cushion material exists. Box taped and secure.	PASS

Review of Third-Party Analysis

Panel	Method	Specification	Results*	Pass/Fail
Potency - Total CBD	HPLC-UV DAD	*NLT (product strength) mg / bottle	2290mg	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: 10 ppm (.001-0.3%)	ND	PASS
Expanded Pesticide Panel	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	ND	PASS
Microbial Escherichia coli (STEC)	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram	Absent	PASS
Microbial Salmonella	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram	Absent	PASS
Microbial Yeast and Mold	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 ² CFU/gram	Below LOQ	PASS
Microbial Total Coliforms*	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 ² CFU/gram	Below LOQ	PASS
Microbial Total Aerobic Count*	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 ³ CFU/gram	Below LOQ	PASS
Heavy Metals Panel	ICP-MS	Arsenic (As): ≤1.5 ppm Cadmium (Cd): ≤0.5 ppm Lead (Pb): ≤0.5 ppm Mercury (Hg): ≤1.5 ppm	ND	PASS
Mycotoxins	ICP-MS	Total Aflatoxins <20 ppb† Afltoxin B1 < 5 ppb Ochratoxin < 5ppb		PASS
Residual Solvents	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	ND	PASS

* Level of Quantitation, † Parts Per Million ‡ Part Per Billion CFU/g=Colony Forming Units per Gram
*Nothing Less Than
10²=100 CFU
10³=1,000 CFU



6/28/2023

Quality Certified

Name

Date

Organic 2250mg CBD Broad Spectrum Tincture

Batch ID or Lot Number: 230612B	Test: Potency	Reported: 01Mar2023	USDA License: N/A
Matrix: Concentrate	Test ID: T000236826	Started: 27Feb2023	Sampler ID: N/A
	Method(s): TM14 (HPLC-DAD): Potency – Standard Cannabinoid Analysis	Received: 27Feb2023	Status: Active

Cannabinoids


	LOD (%)	LOQ (%)	Result (%)	Result (mg/g)	Notes
Cannabichromene (CBC)	0.007	0.023	<LOQ	<LOQ	
Cannabichromenic Acid (CBCA)	0.007	0.021	ND	ND	
Cannabidiol (CBD)	0.022	0.062	8.300	83.00	
Cannabidiolic Acid (CBDA)	0.023	0.063	ND	ND	
Cannabidivarin (CBDV)	0.005	0.015	0.041	0.41	
Cannabidivarinic Acid (CBDVA)	0.009	0.026	ND	ND	
Cannabigerol (CBG)	0.004	0.013	0.571	5.71	
Cannabigerolic Acid (CBGA)	0.017	0.054	ND	ND	
Cannabinol (CBN)	0.005	0.017	ND	ND	
Cannabinolic Acid (CBNA)	0.012	0.037	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.020	0.065	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.019	0.059	ND	ND	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.016	0.052	ND	ND	
Tetrahydrocannabivarin (THCV)	0.004	0.012	0.019	0.19	
Tetrahydrocannabivarinic Acid (THCVA)	0.015	0.046	ND	ND	
Total Cannabinoids			8.931	89.31	
Total Potential THC			ND	ND	
Total Potential CBD			8.300	83.00	

Final Approval



Karen Winternheimer
01Mar2023
08:25:00 AM MST

PREPARED BY / DATE



Sam Smith
01Mar2023
08:27:00 AM MST

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/29fc63f9-d1af-4859-b172-2db9785f1c51>

Definitions

% = % (w/w) = Percent (weight of analyte / weight of product). ND = None Detected (defined by dynamic range of the method).
Total Potential Delta 9-THC or CBD is calculated to take into account the loss of a carboxyl group during decarboxylation step, using the following formulas: Total Potential Delta 9-THC = Delta 9-THC + (Delta 9-THCa *(0.877)) and Total CBD = CBD + (CBDA *(0.877)).

Testing results are based solely upon the sample submitted to SC Laboratories, Inc., in the condition it was received. SC Laboratories, Inc., warrants that all analytical work is conducted professionally in accordance with all applicable standard laboratory practices using validated methods. Data was generated using an unbroken chain of comparison to NIST traceable Reference Standards and Certified Reference Materials. This report may not be reproduced, except in full, without the written approval of SC Laboratories, Inc. ISO/IEC 17025:2017 Accredited by A2LA.



Cert #4329.02

CDPHE Certified
29fc63f9d1af4859b1722db9785f1c51.1

Prepared for:
Kentucky Heritage Hemp Company

1251 Deatsville RD
Cox's Creek, KY USA 40013

Organic 2250mg CBD Broad Spectrum Tincture

Batch ID or Lot Number: 230612B	Test: Pesticides	Reported: 09Jan2023	USDA License: NA
Matrix: Concentrate	Test ID: T000231985	Started: 06Jan2023	Sampler ID: NA
	Method(s): TM17 (LC-QQ LC MS/MS)	Received: 03Jan2023	Status: NA

Pesticides	Dynamic Range (ppb)	Result (ppb)	Pesticides	Dynamic Range (ppb)	Result (ppb)
Abamectin	302 - 2650	ND	Malathion	284 - 2755	ND
Acephate	49 - 2757	ND	Metalaxyl	46 - 2772	ND
Acetamiprid	48 - 2729	ND	Methiocarb	47 - 2798	ND
Azoxystrobin	44 - 2734	ND	Methomyl	50 - 2748	ND
Bifenazate	44 - 2723	ND	MGK 264 1	156 - 1626	ND
Boscalid	50 - 2802	ND	MGK 264 2	111 - 1135	ND
Carbaryl	44 - 2723	ND	Myclobutanil	44 - 2793	ND
Carbofuran	45 - 2737	ND	Naled	53 - 2755	ND
Chlorantraniliprole	44 - 2807	ND	Oxamyl	46 - 2717	ND
Chlorpyrifos	52 - 2797	ND	Pacllobutrazol	44 - 2723	ND
Clofentezine	268 - 2743	ND	Permethrin	301 - 2742	ND
Diazinon	275 - 2746	ND	Phosmet	43 - 2760	ND
Dichlorvos	289 - 2756	ND	Prophos	273 - 2796	ND
Dimethoate	46 - 2716	ND	Propoxur	43 - 2733	ND
E-Fenpyroximate	283 - 2727	ND	Pyridaben	295 - 2732	ND
Etofenprox	46 - 2715	ND	Spinosad A	35 - 2225	ND
Etoxazole	296 - 2717	ND	Spinosad D	47 - 495	ND
Fenoxycarb	46 - 2751	ND	Spiromesifen	280 - 2759	ND
Fipronil	64 - 2672	ND	Spirotetramat	273 - 2764	ND
Flonicamid	56 - 2727	ND	Spiroxamine 1	20 - 1222	ND
Fludioxonil	276 - 2738	ND	Spiroxamine 2	26 - 1551	ND
Hexythiazox	44 - 2742	ND	Tebuconazole	280 - 2721	ND
Imazalil	264 - 2779	ND	Thiacloprid	46 - 2721	ND
Imidacloprid	51 - 2742	ND	Thiamethoxam	50 - 2750	ND
Kresoxim-methyl	41 - 2755	ND	Trifloxystrobin	44 - 2744	ND

Final Approval


Sam Smith
09Jan2023
12:08:00 PM MST

PREPARED BY / DATE


Karen Winternheimer
09Jan2023
12:12:00 PM MST

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/6ff98e26-7d59-446c-b26a-f58dc69f760a>

Definitions

ND = None Detected (defined by dynamic range of the method)
Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range
ppb = Parts Per Billion

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Cert. #4329.02
6ff98e267d59446cb26af58dc69f760a.1


Organic 2250mg CBD Broad Spectrum Tincture

Batch ID or Lot Number: 230612B	Test: Heavy Metals	Reported: 06Jan2023	USDA License: NA
Matrix: Concentrate Co	Test ID: T000231987	Started: 05Jan2023	Sampler ID: NA
	Method(s): TM19 (ICP-MS): Heavy Metals	Received: 03Jan2023	Status: NA

Heavy Metals	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.04 - 4.33	ND	
Cadmium	0.05 - 4.61	ND	
Mercury	0.05 - 4.65	ND	
Lead	0.05 - 4.56	ND	

Final Approval


 Sam Smith
 06Jan2023
 08:57:00 AM MST
 PREPARED BY / DATE


 Karen Winternheimer
 06Jan2023
 08:59:00 AM MST
 APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/8f3e34f6-67da-423d-93ee-90bfc62cdd5>

Definitions
 ND = None Detected (defined by dynamic range of the method)
 Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

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Cert #4329.02


CDPHE Certified
 8f3e34f667da423d93ee90bfc62cdd5.1


Organic 2250mg CBD Broad Spectrum Tincture

Batch ID or Lot Number: 230612B	Test: Residual Solvents	Reported: 09Jan2023	USDA License: N/A
Matrix: Concentrate	Test ID: T000231988	Started: 09Jan2023	Sampler ID: N/A
	Method(s): TM04 (GC-MS): Residual Solvents	Received: 03Jan2023	Status: Active

Residual Solvents	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	91 - 1811	ND	
Butanes (Isobutane, n-Butane)	181 - 3620	ND	
Methanol	57 - 1142	ND	
Pentane	93 - 1858	ND	
Ethanol	91 - 1821	ND	
Acetone	91 - 1821	ND	
Isopropyl Alcohol	93 - 1862	ND	
Hexane	6 - 113	ND	
Ethyl Acetate	93 - 1856	ND	
Benzene	0.2 - 4.0	ND	
Heptanes	98 - 1951	ND	
Toluene	17 - 331	ND	
Xylenes (m,p,o-Xylenes)	119 - 2386	ND	

Final Approval


 Sam Smith
 09Jan2023
 01:23:00 PM MST
 PREPARED BY / DATE


 Karen Winternheimer
 09Jan2023
 01:24:00 PM MST
 APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/94c6b1fa-ab2f-4f98-95e3-2155dd1d9d52>

Definitions
 ND = None Detected (defined by dynamic range of the method)
 Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

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Cert #4329.02


CDPHE Certified
 94c6b1faab2f4f9895e32155dd1d9d52.1


Organic 2250mg CBD Broad Spectrum Tincture

Batch ID or Lot Number: 230612B	Test: Mycotoxins	Reported: 11Jan2023	USDA License: N/A
Matrix: Concentrate	Test ID: T000231989	Started: 10Jan2023	Sampler ID: N/A
	Method(s): TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins	Received: 03Jan2023	Status: Active

Mycotoxins	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	4.79 - 131.77	ND	N/A
Aflatoxin B1	1.06 - 34.16	ND	
Aflatoxin B2	1.16 - 34.36	ND	
Aflatoxin G1	1.23 - 33.62	ND	
Aflatoxin G2	1.26 - 33.46	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

Final Approval


 Sam Smith
 11Jan2023
 07:46:00 AM MST
 PREPARED BY / DATE


 Karen Winternheimer
 11Jan2023
 07:48:00 AM MST
 APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/f979855f-6a86-4d94-935f-9a4647452e9a>

Definitions
 ND = None Detected (defined by dynamic range of the method)
 Dynamic Range = Limit of Quantitation (LOQ) through Upper Limit of Method Range

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Cert #4329.02

CDPHE Certified
 f979855f6a864d94935f9a4647452e9a.1

Organic 2250mg CBD Broad Spectrum Tincture

Batch ID or Lot Number: 230612B	Test: Microbial Contaminants	Reported: 16Jun2023	USDA License: N/A
Matrix: Finished Product	Test ID: T000246410	Started: 26May2023	Sampler ID: N/A
	Method(s): TM25 (qPCR) TM24, TM26, TM27 (Culture Plating): Microbial (Colorado Panel)	Received: 13Jun2023	Status: Active

Microbial Contaminants

Contaminants	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10 ⁰ CFU/25g	NA	Absent	Free from visual mold, mildew, and foreign matter
<i>Salmonella</i>	TM25: PCR	10 ⁰ CFU/25g	NA	Absent	
Total Yeast and Mold*	TM24: Culture Plating	10 ¹ CFU/g	1.0x10 ² - 1.5x10 ⁴	None Detected	
Total Aerobic Count*	TM26: Culture Plating	10 ² CFU/g	1.0x10 ³ - 1.5x10 ⁵	None Detected	
Total Coliforms*	TM27: Culture Plating	10 ¹ CFU/g	1.0x10 ² - 1.5x10 ⁴	None Detected	

Final Approval



Brianne Maillot
16Jun2023
10:07:00 AM MDT



Brett Hudson
16Jun2023
03:57:00 PM MDT



PREPARED BY / DATE

APPROVED BY / DATE

<https://results.botanacor.com/api/v1/coas/uuid/fdaf8c32-d6c7-4b85-9335-3a504fb02032>

Definitions

* Values recorded in scientific notation, a common microbial practice of expressing numbers that are too large to be conveniently written in decimal form. Examples: 10² = 100 CFU, 10³ = 1,000 CFU, 10⁴ = 10,000 CFU, 10⁵ = 100,000 CFU
CFU/g = Colony Forming Units per Gram, LOD = Limit of Detection
ULOQ = Upper Limit of Quantitation, LLOQ = Lower Limit of Quantitation
STEC = Shiga Toxin-Producing E. coli

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Cert #4329.02

CDPHE Certified
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