

# CERTIFICATE OF ANALYSIS

**PRODUCT NAME:** Organic CBD Tincture - Mint  
**PRODUCT STRENGTH:** 1350mg  
**TINCTURE BATCH:** 220701B  
**BEST BY DATE:** 7/1/2024  
**HEMP EXTRACT LOT:** BCA-000390-220607

## Physical Attributes


Test	Method	Specification	Results
Color	Joy Internal	Golden to Amber	PASS
Odor	Joy Internal	Characteristic - Olive and Hemp, Minty	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
<b>Potency - Total CBD</b>	HPLC-UV DAD	LOQ*: ≥ product strength mg / bottle	<b>47.6mg</b>	PASS
<b>Potency - D9-THC</b>	HPLC-UV DAD	LOQ: <0.01% (broad spectrum)	<b>Below LOQ</b>	PASS
<b>Expanded Pesticide Panel</b>	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	<b>Below LOQ</b>	PASS
<b>Microbial</b> Escherichia coli (STEC)	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram**	<b>Absent</b>	PASS
<b>Microbial</b> Salmonella	PCR	Complies with CDPHE 6 CCR 1010-21 - LOQ 1 CFU/25 gram	<b>Absent</b>	PASS
<b>Microbial</b> Yeast and Mold	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 <sup>2</sup> CFU/gram	<b>Below LOQ</b>	PASS
<b>Microbial</b> Total Coliforms	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 <sup>2</sup> CFU/gram	<b>Below LOQ</b>	PASS
<b>Microbial</b> Total Aerobic Count	Culture Plating	Complies with CDPHE 6 CCR 1010-21 - LOQ 10 <sup>3</sup> CFU/gram	<b>Below LOQ</b>	PASS
<b>Heavy Metals</b>	ICP-MS	Arsenic (As): ≤1.5 ppm† Cadmium (Cd): ≤0.5 ppm Lead (Pb): ≤0.5 ppm Mercury (Hg): ≤1.5 ppm	<b>Below LOQ</b>	PASS
<b>Mycotoxins</b>	ICP-MS	Total Aflatoxins <20 ppb†† Afltoxin B1 < 5 ppb Ochratoxin < 5 ppb	<b>Below LOQ</b>	PASS
<b>Residual Solvents</b>	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	<b>Below LOQ</b>	PASS

\*Level of Quantification  
 \*\*Colony Forming Units per Gram  
 † Parts Per Million †† Part Per Billion

Values expressed in scientific notation.  
 Examples:  
 10<sup>2</sup>=100  
 10<sup>3</sup>=1,000

Quality Certified  7/28/22  
 \_\_\_\_\_  
 Name Date


### 1350 BS Mint

Batch ID or Lot Number: 220701B	Test: <b>Potency</b>	Reported: <b>19Jul2022</b>	USDA License: N/A
Matrix: Solution	Test ID: T000212957	Started: 07Jul2022	Sampler ID: N/A
	Method(s): TM14 (HPLC-DAD): Potency – Standard Cannabinoid Analysis	Received: 06Jul2022	Status: Active

### Cannabinoids

	LOD (mg/mL)	LOQ (mg/mL)	Result (mg/mL)	Result (mg/g)	Notes
Cannabichromene (CBC)	0.070	0.212	ND	ND	Density = 1g/mL
Cannabichromenic Acid (CBCA)	0.064	0.194	ND	ND	
Cannabidiol (CBD)	0.167	0.535	51.846	51.85	
Cannabidiolic Acid (CBDA)	0.172	0.549	ND	ND	
Cannabidivarin (CBDV)	0.040	0.127	0.208	0.21	
Cannabidivarinic Acid (CBDVA)	0.072	0.229	ND	ND	
Cannabigerol (CBG)	0.040	0.120	3.564	3.56	
Cannabigerolic Acid (CBGA)	0.165	0.503	ND	ND	
Cannabinol (CBN)	0.052	0.157	ND	ND	
Cannabinolic Acid (CBNA)	0.113	0.343	ND	ND	
Delta 8-Tetrahydrocannabinol (Delta 8-THC)	0.197	0.599	ND	ND	
Delta 9-Tetrahydrocannabinol (Delta 9-THC)	0.179	0.544	ND	ND	
Delta 9-Tetrahydrocannabinolic Acid (THCA-A)	0.158	0.482	ND	ND	
Tetrahydrocannabivarin (THCV)	0.036	0.109	ND	ND	
Tetrahydrocannabivarinic Acid (THCVA)	0.140	0.425	ND	ND	
<b>Total Cannabinoids</b>			<b>55.618</b>	<b>55.62</b>	
Total Potential THC			ND	ND	
Total Potential CBD			51.846	51.85	

### Final Approval



Karen Winternheimer  
 19Jul2022  
 04:56:00 PM MDT

PREPARED BY / DATE



Kayla Phye  
 19Jul2022  
 05:02:00 PM MDT

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/09f9afb9-95bf-43cd-881e-8f39c7886fcb>

**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)).

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Cert #4329.02

CDPHE Certified  
 09f9afb995bf43cd881e8f39c7886fcb.1

# CERTIFICATE OF ANALYSIS

Prepared for:

**JOY ORGANICS**

5042 Technology Parkway Ste. 500  
FT. COLLINS, CO USA 80528

## 1350 mg 5G Broad Spectrum Tincture Bulk in EVOO

Batch ID or Lot Number: OTM1350-220701B	Test: <b>Residual Solvents</b>	Reported: <b>14Jun2022</b>	USDA License: N/A
Matrix: Concentrate	Test ID: T000209819	Started: 14Jun2022	Sampler ID: N/A
	Method(s): TM04 (GC-MS): Residual Solvents	Received: 10Jun2022	Status: Active

Residual Solvents	Dynamic Range (ppm)	Result (ppm)	Notes
Propane	82 - 1630	ND	
Butanes (Isobutane, n-Butane)	124 - 2481	ND	
Methanol	50 - 1010	ND	
Pentane	72 - 1446	ND	
Ethanol	73 - 1465	ND	
Acetone	78 - 1565	ND	
Isopropyl Alcohol	83 - 1652	ND	
Hexane	5 - 102	ND	
Ethyl Acetate	82 - 1633	ND	
Benzene	0.2 - 3.3	ND	
Heptanes	80 - 1592	ND	
Toluene	15 - 296	ND	
Xylenes (m,p,o-Xylenes)	108 - 2168	ND	

### Final Approval



Jacob Miller  
14Jun2022  
05:51:00 PM MDT

PREPARED BY / DATE



Ryan Weems  
14Jun2022  
05:55:00 PM MDT

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/af53d5c5-4ecf-4c4f-b80f-068037b0378b>

#### 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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# CERTIFICATE OF ANALYSIS

Prepared for:  
**JOY ORGANICS**

5042 Technology Parkway Ste. 500  
FT. COLLINS, CO USA 80528

## 1350 mg 5G Broad Spectrum Tincture Bulk in EVOO

Batch ID or Lot Number: 220701B	Test: <b>Mycotoxins</b>	Reported: <b>14Jun2022</b>	USDA License: N/A
Matrix: Concentrate	Test ID: T000209820	Started: 13Jun2022	Sampler ID: N/A
	Method(s): TM18 (UHPLC-QQQ LCMS/MS): Mycotoxins	Received: 10Jun2022	Status: Active

Mycotoxins	Dynamic Range (ppb)	Result (ppb)	Notes
Ochratoxin A	3.71 - 129.04	ND	N/A
Aflatoxin B1	1.01 - 32.19	ND	
Aflatoxin B2	1.04 - 31.97	ND	
Aflatoxin G1	0.97 - 32.32	ND	
Aflatoxin G2	1.04 - 32.28	ND	
Total Aflatoxins (B1, B2, G1, and G2)		ND	

### Final Approval



Jacob Miller  
14Jun2022  
02:49:00 PM MDT

PREPARED BY / DATE



Ryan Weems  
14Jun2022  
02:52:00 PM MDT

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/e525ddab-5a2e-4663-8a83-278e70102238>

#### Definitions

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Cert #4329.02

CDPHE Certified

e525ddab5a2e46638a83278e70102238.1

Prepared for:  
**JOY ORGANICS**


5042 Technology Parkway Ste. 500  
FT. COLLINS, CO USA 80528

## 1350 mg 5G Broad Spectrum Tincture Bulk in EVOO

Batch ID or Lot Number: <b>220701B</b>	Test: <b>Pesticides</b>	Reported: <b>16Jun2022</b>	USDA License: NA
Matrix: Concentrate	Test ID: T000209817	Started: 14Jun2022	Sampler ID: NA
	Method(s): TM17 (LC-QQ LC MS/MS)	Received: 10Jun2022	Status: NA

Pesticides	Dynamic Range (ppb)	Result (ppb)	Pesticides	Dynamic Range (ppb)	Result (ppb)
Abamectin	365 - 2660	ND	Malathion	304 - 2758	ND
Acephate	45 - 2774	ND	Metalaxyl	51 - 2788	ND
Acetamiprid	43 - 2778	ND	Methiocarb	39 - 2735	ND
Azoxystrobin	40 - 2739	ND	Methomyl	42 - 2747	ND
Bifenazate	42 - 2765	ND	MGK 264 1	187 - 1618	ND
Boscalid	15 - 2744	ND	MGK 264 2	129 - 1129	ND
Carbaryl	40 - 2776	ND	Myclobutanil	37 - 2661	ND
Carbofuran	43 - 2761	ND	Naled	28 - 2666	ND
Chlorantraniliprole	46 - 2731	ND	Oxamyl	3 - 2768	ND
Chlorpyrifos	47 - 2776	ND	Pacllobutrazol	41 - 2732	ND
Clofentezine	306 - 2776	ND	Permethrin	340 - 2681	ND
Diazinon	298 - 2777	ND	Phosmet	41 - 2752	ND
Dichlorvos	311 - 2758	ND	Prophos	290 - 2708	ND
Dimethoate	45 - 2766	ND	Propoxur	39 - 2744	ND
E-Fenpyroximate	296 - 2737	ND	Pyridaben	302 - 2767	ND
Etofenprox	42 - 2726	ND	Spinosad A	36 - 2242	ND
Etoxazole	299 - 2708	ND	Spinosad D	55 - 497	ND
Fenoxycarb	45 - 2737	ND	Spiromesifen	306 - 2722	ND
Fipronil	39 - 2733	ND	Spirotetramat	292 - 2784	ND
Flonicamid	4 - 2732	ND	Spiroxamine 1	17 - 1160	ND
Fludioxonil	260 - 2633	ND	Spiroxamine 2	21 - 1502	ND
Hexythiazox	49 - 2737	ND	Tebuconazole	259 - 2755	ND
Imazalil	286 - 2760	ND	Thiacloprid	41 - 2763	ND
Imidacloprid	51 - 2800	ND	Thiamethoxam	45 - 2752	ND
Kresoxim-methyl	53 - 2822	ND	Trifloxystrobin	41 - 2736	ND

## Final Approval



Karen Winternheimer  
16Jun2022  
04:48:00 PM MDT

PREPARED BY / DATE



Daniel Weidensaul  
16Jun2022  
05:01:00 PM MDT

APPROVED BY / DATE



<https://results.botanacor.com/api/v1/coas/uuid/19a1d5c3-6e0c-46df-993b-981a8cb70fc2>

### 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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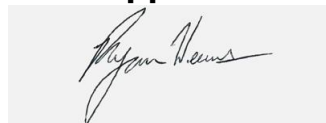
## CERTIFICATE OF ANALYSIS

Prepared for:

**JOY ORGANICS**5042 Technology Parkway Ste. 500  
FT. COLLINS, CO USA 80528**1350 mg 5G Broad Spectrum Tincture Bulk in EVOO**

Batch ID or Lot Number: 220701B	Test: <b>Heavy Metals</b>	Reported: <b>14Jun2022</b>	USDA License: NA
Matrix: Unit Co	Test ID: T000209818	Started: 14Jun2022	Sampler ID: NA
	Method(s): TM19 (ICP-MS): Heavy Metals	Received: 10Jun2022	Status: NA

Heavy Metals	Dynamic Range (ppm)	Result (ppm)	Notes
Arsenic	0.05 - 4.58	ND	
Cadmium	0.05 - 4.53	ND	
Mercury	0.04 - 4.43	ND	
Lead	0.05 - 4.66	ND	

**Final Approval**Ryan Weems  
14Jun2022  
02:50:00 PM MDT

PREPARED BY / DATE

Daniel Weidensaul  
14Jun2022  
02:53:00 PM MDT

APPROVED BY / DATE

<https://results.botanacor.com/api/v1/coas/uuid/a4040976-d3bf-47cf-995e-a7bdab987e29>**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

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## 1350 BS Mint

Batch ID or Lot Number: 220701B	Test: <b>Microbial Contaminants</b>	Reported: <b>11Jul2022</b>	USDA License: N/A
Matrix: Finished Product	Test ID: T000212958	Started: 07Jul2022	Sampler ID: N/A
	Method(s): TM25 (qPCR) TM24, TM26, TM27 (Culture Plating): Microbial (Colorado Panel)	Received: 06Jul2022	Status: Active

## Microbial Contaminants

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

## Final Approval



PREPARED BY / DATE

Eden Thompson-Wright  
 10Jul2022  
 09:41:00 AM MDT

APPROVED BY / DATE



Brett Hudson  
 11Jul2022  
 10:34:00 AM MDT



<https://results.botanacor.com/api/v1/coas/uuid/9ec839c7-8f51-474f-99cd-35e37084fab9>

### 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: 10<sup>2</sup> = 100 CFU, 10<sup>3</sup> = 1,000 CFU, 10<sup>4</sup> = 10,000 CFU, 10<sup>5</sup> = 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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