JOY ORGANICS

CERTIFICATE OF ANALYSIS

PRODUCT NAME:	Organic CBD Tincture - Mint
PRODUCT STRENGTH:	2250mg
TINCTURE BATCH:	230307A
BEST BY DATE:	3/7/2025
HEMP EXTRACT LOT:	592

Physical Atttributes

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
Potency - Total CBD	HPLC-UV DAD	LOQ*: ≥ product strength mg / bottle	**2466mg**	PASS
Potency - D9-THC	HPLC-UV DAD	LOQ: <0.01% (broad spectrum)	**Below LOQ**	PASS
Expanded Pesticide Panel	HPLC-QQQ	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	**Below LOQ**	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	ICP-MS	Arsenic (As): ≤1.5 ppm† Cadmium (Cd): ≤0.5 ppm Lead (Pb): ≤0.5 ppm Mercury (Hg): ≤1.5 ppm	**Below LOQ**	PASS
Mycotoxins	ICP-MS	Total Aflatoxins <20 ppb†† Afltoxin B1 < 5 ppb Ochratoxin < 5ppb	**Below LOQ**	PASS
Residual Solvents	GC-HS-MSD	LOQ: Complies with CDPHE 6 CCR 1010-21 Industrial Hemp Extract	**Below LOQ**	PASS

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

Values expressed in scientific notation.
Examples:
10^2=100
10^3=1,000

Quality Certified — Name: 3/29/2023 — Date

2519 S. Shields St. #1042, Fort Collins, CO 80526 Tel: (833) 569-7223 www.joyorganics.com

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CERTIFICATE OF ANALYSIS

2250mg BS Mint Tincture

Batch ID or Lot Number:	Test:	Reported:	USDA License:
230307A	**Potency**	**01Mar2023**	N/A
Matrix:	Test ID:	Started:	Sampler ID:
Concentrate	T000236826	27Feb2023	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)).

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CERTIFICATE OF ANALYSIS

2250mg BS Mint Tincture

Batch ID or Lot Number:	Test:	Reported:	USDA License:
230307A	**Microbial Contaminants**	**13Mar2023**	N/A
Matrix:	Test ID:	Started:	Sampler ID:
Finished Product	T000237941	02Mar2023	N/A
	Method(s): TM25 (qPCR) TM24, TM26, TM27 (Culture Plating): Microbial (Colorado Panel)	Received: 09Mar2023	Status: Active

Microbial Contaminants

	Method	LOD	Quantitation Range	Result	Notes
STEC	TM25: PCR	10^0 CFU/25g	NA	Absent	Free from visual mold, mildew, and foreign matter
Salmonella	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

Eden Thompson-Wright
13Mar2023
03:55:00 PM MDT

PREPARED BY / DATE

Brett Hudson
14Mar2023
06:04:00 PM MDT

APPROVED BY / DATE

https://results.botanacor.com/api/v1/coas/uuid/d9841f3d-e8cb-4a0a-8631-fcb7a9449501

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: 10^2 = 100 CFU, 10^3 = 1,000 CFU, 10^4 = 10,000 CFU, 10^5 = 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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2250mg BS Mint Tincture

Batch ID or Lot Number: 230307A	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

Samantha Smith

Sam Smith
06Jan2023
08:57:00 AM MST

PREPARED BY / DATE

K Winternheimer

Karen Winternheimer
06Jan2023
08:59:00 AM MST

APPROVED BY / DATE

https://results.botanacor.com/api/v1/coas/uuid/8f3e34f6-67da-423d-93ee-90fbfc62cdd5

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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2250mg BS Mint Tincture

Batch ID or Lot Number:230307A	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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CERTIFICATE OF ANALYSIS

2250mg BS Mint Tincture

Batch ID or Lot Number:230307A	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

Samantha Smith

Sam Smith
11Jan2023
07:46:00 AM MST

PREPARED BY / DATE

K Winternheimer

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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CERTIFICATE OF ANALYSIS

003. k e @Q Kg l r Rg l arspc

Batch ID or Lot Number:01.1.5?	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)		**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	Paclobutrazol	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

Samantha Smith
Sam Smith
09Jan2023
12:08:00 PM MST
PREPARED BY / DATE

K Winternheimer
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

Cert #4329.02
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