

Hemp Quality Assurance Testing

CERTIFICATE OF ANALYSIS

DATE ISSUED 01/19/2022

SAMPLE NAME: cbdMD 60 count Sleep Gummies

Infused, Hemp Infused

CULTIVATOR / MANUFACTURER

Business Name: License Number:

Address:

SAMPLE DETAIL

Batch Number: MD25S02 **Sample ID:** 220113P012

DISTRIBUTOR / TESTED FOR

Business Name: cbdMD License Number:

Address:

Date Collected: 01/13/2022 Date Received: 01/13/2022

Batch Size:

Sample Size: 1.0 units

Unit Mass: 240 grams per Unit Serving Size: 8 grams per Serving







Scan QR code to verify authenticity of results.

CANNABINOID ANALYSIS - SUMMARY

Total THC: Not DetectedTotal THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during the decarboxylation step:

Total THC = Δ9THC + (THCa (0.877))

Total CBD: 889.920 mg/unit

Total CBD = CBD + (CBDa (0.877))

 $Sum \ of \ Cannabinoids = \Delta 9 THC + THCa + CBD + CBDa + CBG + CBGa + Sum \ of \ Cannabinoids: 924.000 \ mg/unit \ THCV + THCVa + CBC + CBCa + CBDV + CBDVa + <math>\Delta 8 THC + CBL + CBN$

g/unit THCV + THCVa + CBC + CBCa + CBDV + CBDVa + Δ8THC + CBL + CBN
Total Cannabinoids = (Δ9THC+0.877*THCa) + (CBD+0.877*CBDa) +
(CBG+0.877*CBGa) + (THCV+0.877*THCVa) + (CBC+0.877*CBCa) +

Total Cannabinoids: 924.000 mg/unit (CBG+0.8//*CBGa) + (THCV+0.8//*THCVa) + (CBDV+0.877*CBDVa) + Δ8THC + CBL + CBN

TERPENOID ANALYSIS - SUMMARY

39 TESTED, TOP 3 HIGHLIGHTED

Total Terpenoids: ND

SAFETY ANALYSIS - SUMMARY

Pesticides:

PASS

Mycotoxins:

PASS

Residual Solvents:

PASS

Heavy Metals:

PASS Microbiology (PCR):

PASS Microbiology (Plating):

PASS

Foreign Material: OPASS Water Activity: OPASS

For quality assurance purposes. Not a Pre-Harvest Hemp Lab Test Report. These results relate only to the sample included on this report. This report shall not be reproduced, except in full, without written approval of the laboratory.

Sample Certification: Action Limits used in this report are a compilation of guidance from state regulatory agencies in all states. Action limits for required tests are either state-specific, or the lower of any conflicting state regulations based upon the panel requested.

Decision Rule: Statements of conformity (e.g. Pass/Fail) to specifications are made in this report without taking measurement uncertainty into account. Where statements of conformity are made in this report, the following decision rules are applied: PASS - Results within limits/specifications, FAIL - Results exceed limits/specifications.

 $\label{eq:References: limit of detection (LOD), limit of quantification (LOQ), not detected (ND), not tested (NT), too numerous to count > 250 cfu/plate (TNTC), colony-forming unit (cfu)$

LQC verified by: Josh Antunovich Date: 01/19/2022 Approved by: Josh Wurzer, President Date: 01/19/2022



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Tested by high-performance liquid chromatography with diode-array detection (HPLC-DAD).

Method: QSP 1157 - Analysis of Cannabinoids by HPLC-DAD

TOTAL THC: Not Detected Total THC (Δ9THC+0.877*THCa)

TOTAL CBD: 889.920 mg/unit

Total CBD (CBD+0.877*CBDa)

TOTAL CANNABINOIDS: 924.000 mg/unit

Total Cannabinoids (Total THC) + (Total CBD) + (Total CBG) + (Total THCV) + (Total CBC) + (Total CBDV) + Δ 8THC + CBL + CBN

TOTAL CBG: 20.160 mg/unit

Total CBG (CBG+0.877*CBGa)

TOTAL THCV: ND

Total THCV (THCV+0.877*THCVa)

TOTAL CBC: ND

Total CBC (CBC+0.877*CBCa)

TOTAL CBDV: <LOQ
Total CBDV (CBDV+0.877*CBDVa)

CANNABINOID TEST RESULTS - 01/15/2022

	COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
Ī	CBD	0.004 / 0.011	±0.1776	3.708	0.3708
Ī	CBG	0.002 / 0.006	±0.0052	0.084	0.0084
	CBN	0.001 / 0.007	±0.0021	0.058	0.0058
	CBDV	0.002 / 0.012	N/A	<loq< th=""><th><loq< th=""></loq<></th></loq<>	<loq< th=""></loq<>
	Δ9ΤΗС	0.002 / 0.014	N/A	ND	ND
	Δ8ΤΗС	0.01 / 0.02	N/A	ND	ND
	THCa	0.001 / 0.005	N/A	ND	ND
	THCV	0.002 / 0.012	N/A	ND	ND
t	THCVa	0.002 / 0.019	N/A	ND	ND
	CBDa	0.001 / 0.026	N/A	ND	ND
	CBDVa	0.001 / 0.018	N/A	ND	ND
	CBGa	0.002 / 0.007	N/A	ND	ND
	CBL	0.003 / 0.010	N/A	ND	ND
	СВС	0.003 / 0.010	N/A	ND	ND
	CBCa	0.001 / 0.015	N/A	ND	ND
	SUM OF CANNA	BINOIDS		3.850 mg/g	0.385%

Unit Mass: 240 grams per Unit / Serving Size: 8 grams per Serving

Δ9THC per Unit	ND
Δ9THC per Serving	ND
Total THC per Unit	ND
Total THC per Serving	ND
CBD per Unit	889.920 mg/unit
CBD per Serving	29.664 mg/serving
Total CBD per Unit	889.920 mg/unit
Total CBD per Serving	29.664 mg/serving
Sum of Cannabinoids per Unit	924.000 mg/unit
Sum of Cannabinoids per Serving	30.800 mg/serving
Total Cannabinoids per Unit	924.000 mg/unit
Total Cannabinoids per Serving	30.800 mg/serving







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Terpenoid Analysis

Terpene analysis utilizing gas chromatography-flame ionization detection (GC-FID).

Method: QSP 1192 - Analysis of Terpenoids by GC-FID

TERPENOID TEST RESULTS - 01/16/2022

COMPOUND	LOD/LOQ (mg/g)	MEASUREMENT UNCERTAINTY (mg/g)	RESULT (mg/g)	RESULT (%)
α Pinene	0.005 / 0.017	N/A	ND	ND
Camphene	0.005 / 0.015	N/A	ND	ND
Sabinene	0.004 / 0.014	N/A	ND	ND
β Pinene	0.004 / 0.014	N/A	ND	ND
Myrcene	0.008 / 0.025	N/A	ND	ND
α Phellandrene	0.006 / 0.020	N/A	ND	ND
3 Carene	0.005 / 0.018	N/A	ND	ND
α Terpinene	0.005 / 0.017	N/A	ND	ND
p-Cymene	0.005 / 0.016	N/A	ND	ND
Limonene	0.005 / 0.016	N/A	ND	ND
Eucalyptol	0.006 / 0.018	N/A	ND	ND
Ocimene	0.011/0.038	N/A	ND	ND
γTerpinene	0.006 / 0.018	N/A	ND	ND
Sabinene Hydrate	0.006 / 0.022	N/A	ND	ND
Fenchone	0.009 / 0.028	N/A	ND	ND
Terpinolene	0.008 / 0.026	N/A	ND	ND
Linalool	0.009 / 0.032	N/A	ND	ND
Fenchol	0.010 / 0.034	N/A	ND	ND
(-)-Isopulegol	0.005 / 0.016	N/A	ND	ND
Camphor	0.006/0.019	N/A	ND	ND
Isoborneol	0.004 / 0.012	N/A	ND	ND
Borneol	0.005 / 0.016	N/A	ND	ND
Menthol	0.008 / 0.025	N/A	ND	ND
Terpineol	0.016 / 0.055	N/A	ND	ND
Nerol	0.003 / 0.011	N/A	ND	ND
Citronellol	0.003 / 0.010	N/A	ND	ND
R-(+)-Pulegone	0.003 / 0.011	N/A	ND	ND
Geraniol	0.002 / 0.007	N/A	ND	ND
Geranyl Acetate	0.004 / 0.014	N/A	ND	ND
α Cedrene	0.005 / 0.016	N/A	ND	ND
β Caryophyllene	0.004 / 0.012	N/A	ND	ND
trans-β-Farnesene	0.008 / 0.025	N/A	ND	ND
α Humulene	0.009/0.029	N/A	ND	ND
Valencene	0.009 / 0.030	N/A	ND	ND
Nerolidol	0.009 / 0.028	N/A	ND	ND
Caryophyllene Oxide	0.010 / 0.033	N/A	ND	ND
Guaiol	0.009 / 0.030	N/A	ND	ND
Cedrol	0.008 / 0.027	N/A	ND	ND
α Bisabolol	0.008 / 0.026	N/A	ND	ND
TOTAL TERPENOIDS			ND	ND











Pesticide Analysis

Pesticide and plant growth regulator analysis utilizing high-performance liquid chromatography-mass spectrometry (HPLC-MS) or gas chromatography-mass spectrometry (GC-MS).

*GC-MS utilized where indicated.

Method: QSP 1212 - Analysis of Pesticides and Mycotoxins by LC-MS or QSP 1213 - Analysis of Pesticides by GC-MS

Exclusions¹ see last page

Exclusions² see last page



COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (µg/g)	RESULT
Abamectin	0.03 / 0.10	0.3	N/A	ND	PASS
Acephate	0.02 / 0.07	5	N/A	ND	PASS
Acequinocyl	0.02 / 0.07	4	N/A	ND	PASS
Acetamiprid	0.02 / 0.05	5	N/A	ND	PASS
Aldicarb	0.03 / 0.08	≥LOD	N/A	ND	PASS
Azoxystrobin	0.02 / 0.07	40	N/A	ND	PASS
Bifenazate	0.01 / 0.04	5	N/A	ND	PASS
Bifenthrin	0.02 / 0.05	0.5	N/A	ND	PASS
Boscalid	0.03 / 0.09	10	N/A	ND	PASS
Captan	0.19/0.57	5	N/A	ND	PASS
Carbaryl	0.02 / 0.06	0.5	N/A	ND	PASS
Carbofuran	0.02 / 0.05	≥LOD	N/A	ND	PASS
Chlorantraniliprole	0.04 / 0.12	40	N/A	ND	PASS
Chlordane*	0.03 / 0.08	≥LOD	N/A	ND	PASS
Chlorfenapyr*	0.03 / 0.10	≥LOD	N/A	ND	PASS
Chlorpyrifos	0.02 / 0.06	≥LOD	N/A	ND	PASS
Clofentezine	0.03 / 0.09	0.5	N/A	ND	PASS
Coumaphos	0.02 / 0.07	≥LOD	N/A	ND	PASS
Cyfluthrin	0.12 / 0.38	1	N/A	ND	PASS
Cypermethrin	0.11/0.32	1	N/A	ND	PASS
Daminozide	0.02 / 0.07	≥LOD	N/A	ND	PASS
DDVP (Dichlorvos)	0.03 / 0.09	≥LOD	N/A	ND	PASS
Diazinon	0.02 / 0.05	0.2	N/A	ND	PASS
Dimethoate	0.03 / 0.08	≥LOD	N/A	ND	PASS
Dimethomorph	0.03 / 0.09	20	N/A	ND	PASS
Ethoprop(hos)	0.03 / 0.10	≥LOD	N/A	ND	PASS
Etofenprox	0.02 / 0.06	≥LOD	N/A	ND	PASS
Etoxazole	0.02 / 0.06	1.5	N/A	ND	PASS
Fenhexamid	0.03 / 0.09	10	N/A	ND	PASS
Fenoxycarb	0.03 / 0.08	≥LOD	N/A	ND	PASS
Fenpyroximate	0.02 / 0.06	2	N/A	ND	PASS
Fipronil	0.03 / 0.08	≥LOD	N/A	ND	PASS
Flonicamid	0.03 / 0.10	2	N/A	ND	PASS
Fludioxonil	0.03 / 0.10	30	N/A	ND	PASS
Hexythiazox	0.02 / 0.07	2	N/A	ND	PASS
lmazalil	0.02 / 0.06	≥LOD	N/A	ND	PASS
Imidacloprid	0.04 / 0.11	3	N/A	ND	PASS
Kresoxim-methyl	0.02 / 0.07	1	N/A	ND	PASS
Malathion	0.03 / 0.09	5	N/A	ND	PASS
Metalaxyl	0.02 / 0.07	15	N/A	ND	PASS
Methiocarb	0.02 / 0.07	≥LOD	N/A	ND	PASS



Continued on next page









Pesticide Analysis Continued

Pesticide and plant growth regulator analysis utilizing high-performance liquid chromatography-mass spectrometry (HPLC-MS) or gas chromatography-mass spectrometry (GC-MS).

*GC-MS utilized where indicated.

Method: QSP 1212 - Analysis of Pesticides and Mycotoxins by LC-MS or QSP 1213 - Analysis of Pesticides by GC-MS

PESTICIDE TEST RESULTS - 01/16/2022 continued **⊘** PASS

	COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (µg/g)	RESULT
	Methomyl	0.03 / 0.10	0.1	N/A	ND	PASS
	Methyl parathion	0.03 / 0.10	≥LOD	N/A	ND	PASS
	Mevinphos	0.03/0.09	≥LOD	N/A	ND	PASS
	Myclobutanil	0.03/0.09	9	N/A	ND	PASS
	Naled	0.02 / 0.07	0.5	N/A	ND	PASS
	Oxamyl	0.04 / 0.11	0.2	N/A	ND	PASS
	Paclobutrazol	0.02 / 0.05	≥LOD	N/A	ND	PASS
	Pentachloronitrobenzene*	0.03/0.09	0.2	N/A	ND	PASS
	Permethrin	0.04 / 0.12	20	N/A	ND	PASS
	Phosmet	0.03 / 0.10	0.2	N/A	ND	PASS
	Piperonylbutoxide	0.02 / 0.07	8	N/A	ND	PASS
	Prallethrin	0.03 / 0.08	0.4	N/A	ND	PASS
	Propiconazole	0.02 / 0.07	20	N/A	ND	PASS
	Propoxur	0.03/0.09	≥LOD	N/A	ND	PASS
	Pyrethrins	0.04 / 0.12	1	N/A	ND	PASS
	Pyridaben	0.02/0.07	3	N/A	ND	PASS
	Spinetoram	0.02/0.07	3	N/A	ND	PASS
	Spinosad	0.02 / 0.07	3	N/A	ND	PASS
	Spiromesifen	0.02 / 0.05	12	N/A	ND	PASS
4	Spirotetramat	0.02 / 0.06	13	N/A	ND	PASS
	Spiroxamine	0.03 / 0.08	≥LOD	N/A	ND	PASS
V	Tebuconazole	0.02 / 0.07	2	N/A	ND	PASS
	Thiacloprid	0.03 / 0.10	≥LOD	N/A	ND	PASS
	Thiamethoxam	0.03 / 0.10	4.5	N/A	ND	PASS
	Trifloxystrobin	0.03 / 0.08	30	N/A	ND	PASS



Mycotoxin Analysis

Mycotoxin analysis utilizing high-performance liquid chromatography-mass spectrometry (HPLC-MS).

Method: QSP 1212 - Analysis of Pesticides and Mycotoxins by LC-MS

Exclusions³ see last page

MYCOTOXIN TEST RESULTS - 01/16/2022 **⊘ PASS**

COMPOUND	LOD/LOQ (µg/kg)	ACTION LIMIT (μg/kg)	MEASUREMENT UNCERTAINTY (μg/kg)	RESULT (µg/kg)	RESULT
Aflatoxin B1	2.0 / 6.0		N/A	ND	
Aflatoxin B2	1.8 / 5.6		N/A	ND	
Aflatoxin G1	1.0 / 3.1		N/A	ND	
Aflatoxin G2	1.2 / 3.5		N/A	ND	
Total Aflatoxin		20		ND	PASS
Ochratoxin A	6.3 / 19.2	20	N/A	ND	PASS
	Aflatoxin B1 Aflatoxin B2 Aflatoxin G1 Aflatoxin G2 Total Aflatoxin	COMPOUND (μg/kg) Aflatoxin B1 2.0 / 6.0 Aflatoxin B2 1.8 / 5.6 Aflatoxin G1 1.0 / 3.1 Aflatoxin G2 1.2 / 3.5 Total Aflatoxin	COMPOUND (μg/kg) (μg/kg) Aflatoxin B1 2.0 / 6.0 Aflatoxin B2 1.8 / 5.6 Aflatoxin G1 1.0 / 3.1 Aflatoxin G2 1.2 / 3.5 Total Aflatoxin 20	COMPOUND (μg/kg) (μg/kg) UNCERTAINTY (μg/kg) Aflatoxin B1 2.0/6.0 N/A Aflatoxin B2 1.8/5.6 N/A Aflatoxin G1 1.0/3.1 N/A Aflatoxin G2 1.2/3.5 N/A Total Aflatoxin 20	COMPOUND (μg/kg) (μg/kg) UNCERTAINTY (μg/kg) (μg/kg) Aflatoxin B1 2.0 / 6.0 N/A ND Aflatoxin B2 1.8 / 5.6 N/A ND Aflatoxin G1 1.0 / 3.1 N/A ND Aflatoxin G2 1.2 / 3.5 N/A ND Total Aflatoxin 20 ND





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Residual Solvents Analysis

Residual Solvent analysis utilizing gas chromatography-mass spectrometry (GC-MS).

Method: QSP 1204 - Analysis of Residual Solvents by GC-MS

Exclusions⁴ see last page

RESIDUAL SOLVENTS TEST RESULTS - 01/16/2022 **⊘** PASS

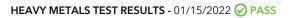
COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (μg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (μg/g)	RESULT
Propane	10/20	5000	N/A	ND	PASS
Butane	10/50	5000	N/A	ND	PASS
Pentane	20/50	5000	N/A	ND	PASS
Hexane	2/5	290	N/A	ND	PASS
Heptane	20/60	5000	N/A	ND	PASS
Benzene	0.03 / 0.09	1	N/A	ND	PASS
Toluene	7/21	890	N/A	ND	PASS
Total Xylenes	50 / 160	2170	N/A	ND	PASS
Methanol	50/200	3000	N/A	ND	PASS
Ethanol	20/50	5000	N/A	ND	PASS
Isopropyl Alcohol	10/40	5000	N/A	ND	PASS
Acetone	20/50	5000	N/A	ND	PASS
Ethyl ether	20/50	5000	N/A	ND	PASS
Ethylene Oxide	0.3 / 0.8	1	N/A	ND	PASS
Ethyl acetate	20/60	5000	N/A	ND	PASS
Chloroform	0.1 / 0.2	1	N/A	ND	PASS
Methylene chloride	0.3 / 0.9	1	N/A	ND	PASS
Trichloroethylene	0.1 / 0.3	1	N/A	ND	PASS
1,2-Dichloroethane	0.05 / 0.1	1	N/A	ND	PASS
Acetonitrile	2/7	410	N/A	ND	PASS



Heavy Metals Analysis

Heavy metal analysis utilizing inductively coupled plasma-mass spectrometry (ICP-MS).

Method: QSP 1160 - Analysis of Heavy Metals by ICP-MS



COMPOUND	LOD/LOQ (µg/g)	ACTION LIMIT (µg/g)	MEASUREMENT UNCERTAINTY (μg/g)	RESULT (µg/g)	RESULT
Arsenic	0.02 / 0.1	0.42	N/A	ND	PASS
Cadmium	0.02 / 0.05	0.27	N/A	ND	PASS
Lead	0.04 / 0.1	0.5	N/A	ND	PASS
Mercury	0.002 / 0.01	0.4	N/A	ND	PASS



Microbiology Analysis

PCR AND PLATING

Analysis conducted by polymerase chain reaction (PCR) and fluorescence detection of microbiological contaminants.

Method: QSP 1221 - Analysis of Microbiological Contaminants

MICROBIOLOGY TEST RESULTS (PCR) - 01/19/2022 PASS

COMPOUND	ACTION LIMIT	RESULT	RESULT
Shiga toxin-producing Escherichia coli	Not Detected in 1g	ND	PASS
Salmonella spp.	Not Detected in 1g	ND	PASS
Listeria monocytogenes	Not Detected in 1g	ND	PASS





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Microbiology Analysis Continued MICROBIOLOGY TEST RESULTS (PLATING) - 01/19/2022 PASS

PCR AND PLATING

Analysis conducted by 3M[™] Petrifilm[™] and plate counts of microbiological contaminants.

Method: QSP 6794 - Plating with 3M[™] Petrifilm[™]

COMPOUND	ACTION LIMIT (cfu/g)	RESULT (cfu/g)	RESULT
Total Aerobic Bacteria	100	ND	PASS
Total Yeast and Mold	10	ND	PASS



Foreign Material Analysis

Visual analysis includes, but is not limited to, sand, soil, cinders, dirt, mold, hair, insect fragments, and mammalian excreta.

Method: QSP 1226 - Analysis of Foreign Material in Cannabis and Cannabis Products

FOREIGN MATERIAL TEST RESULTS - 01/17/2022 PASS

COMPOUND	ACTION LIMIT	RESULT
Total Sample Area Covered by Sand, Soil, Cinders, or Dirt	>25%	PASS
Total Sample Area Covered by Mold	>25%	PASS
Total Sample Area Covered by an Imbedded Foreign Mat	erial >25%	PASS
Insect Fragment Count	> 1 per 3 grams	PASS
Hair Count	> 1 per 3 grams	PASS
Mammalian Excreta Count	> 1 per 3 grams	PASS



Water Activity Analysis

Method: QSP 1227 - Analysis of Water Activity in Cannabis and Cannabis Products

WATER ACTIVITY TEST RESULTS - 01/16/2022 PASS

COMPOUND	ACTION LIMIT (Aw)	MEASUREMENT UNCERTAINTY (Aw)	RESULT (Aw)	RESULT
Water Activity	0.86	±0.03030	0.6221	PASS

1. Exclusions: QSP 1213 - Sample Certification: California Code

of Regulation Title 4 Division 19

2. Exclusions: QSP 1212 - Sample Certification: California Code

of Regulation Title 4 Division 19

3. Exclusions: Sample Certification: California Code of

Regulation Title 4 Division 19

4. Exclusions: Sample Certification: California Code of

Regulation Title 4 Division 19

