SC Labs®

# Hemp Quality Assurance Testing
# CERTIFICATE OF ANALYSIS

**DATE ISSUED 08/16/2023**

## SAMPLE NAME: 1500mg Freeze Roller - Topical
Infused, Topical

### CULTIVATOR / MANUFACTURER
**Business Name:**
**License Number:**
**Address:**

### DISTRIBUTOR / TESTED FOR
**Business Name:** cbdMD
**License Number:**
**Address:**

### SAMPLE DETAIL
**Batch Number:** 230338
**Sample ID:** 230809M008

**Date Collected:** 08/09/2023
**Date Received:** 08/09/2023
**Batch Size:**
**Sample Size:** 3.0 units
**Unit Mass:** 84.681 milliliters per Unit
**Serving Size:**


Scan QR code to verify authenticity of results.

## CANNABINOID ANALYSIS - SUMMARY

**Total THC:** Not Detected

**Total CBD:** 1737.315 mg/unit

**Sum of Cannabinoids:** 1754.590 mg/unit

**Total Cannabinoids:** 1754.590 mg/unit

Total THC/CBD is calculated using the following formulas to take into account the loss of a carboxyl group during the decarboxylation step:
Total THC = $\Delta^9$-THC + (THCa (0.877))
Total CBD = CBD + (CBDa (0.877))
Sum of Cannabinoids = $\Delta^9$-THC + THCa + CBD + CBDa + CBG + CBGa + THCV + THCVa + CBC + CBCa + CBDV + CBDVa + $\Delta^8$-THC + CBL + CBN
Total Cannabinoids = ($\Delta^9$-THC+0.877*THCa) + (CBD+0.877*CBDa) + (CBG+0.877*CBGa) + (THCV+0.877*THCVa) + (CBC+0.877*CBCa) + (CBDV+0.877*CBDVa) + $\Delta^8$-THC + CBL + CBN

**Density:** 0.9362 g/mL

## TERPENOID ANALYSIS - SUMMARY

39 TESTED, TOP 3 HIGHLIGHTED

**Total Terpenoids:** 4.6513%

Menthol 46.325 mg/g  Isopulegol 0.116 mg/g  Borneol 0.072 mg/g

## SAFETY ANALYSIS - SUMMARY

**$\Delta^9$-THC per Unit:** PASS
**Pesticides:** PASS
**Mycotoxins:** PASS
**Residual Solvents:** PASS
**Heavy Metals:** PASS
**Microbiology (PCR):** PASS
**Microbiology (Plating):** ND
**Foreign Material:** PASS

For quality assurance purposes. Not a Regulatory 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:** California Code of Regulations Title 4 Division 19. Department of Cannabis Control Business and Professions Code. Reference: Sections 26100, 26104 and 26110, Business and Professions Code.

**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.

**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: Michael Pham
Job Title: Senior Laboratory Analyst
Date: 08/16/2023

Approved by: Josh Wurzer
Job Title: Chief Compliance Officer
Date: 08/16/2023

## Cannabinoid Analysis

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 ($\Delta^9$-THC+0.877*THCa)

### TOTAL CBD: 1737.315 mg/unit
Total CBD (CBD+0.877*CBDa)

### TOTAL CANNABINOIDS: 1754.590 mg/unit
Total Cannabinoids (Total THC) + (Total CBD) + (Total CBG) + (Total THCV) + (Total CBC) + (Total CBDV) + $\Delta^8$-THC + CBL + CBN

### TOTAL CBG: 10.416 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: 3.895 mg/unit
Total CBDV (CBDV+0.877*CBDVa)

### CANNABINOID TEST RESULTS - 08/11/2023

| COMPOUND | LOD/LOQ (mg/mL) | MEASUREMENT UNCERTAINTY (mg/mL) | RESULT (mg/mL) | RESULT (%) |
|---|---|---|---|---|
| CBD | *0.004 / 0.011* | *±0.7652* | **20.516** | **2.1914** |
| CBG | *0.002 / 0.006* | *±0.0060* | **0.123** | **0.0131** |
| CBDV | *0.002 / 0.012* | *±0.0019* | **0.046** | **0.0049** |
| CBN | *0.001 / 0.007* | *±0.0010* | **0.035** | **0.0037** |
| $\Delta^9$-THC | *0.002 / 0.014* | *N/A* | **ND** | **ND** |
| $\Delta^8$-THC | *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** |
| 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** |
| CBC | *0.003 / 0.010* | *N/A* | **ND** | **ND** |
| CBCa | *0.001 / 0.015* | *N/A* | **ND** | **ND** |
| **SUM OF CANNABINOIDS** | | | **20.720 mg/mL** | **2.2132%** |

### Unit Mass: 84.681 milliliters per Unit

| | | | |
|---|---|---|---|
| $\Delta^9$-THC per Unit | *1100 per-package limit* | **ND** | **PASS** |
| Total THC per Unit | | **ND** | |
| CBD per Unit | | **1737.315 mg/unit** | |
| Total CBD per Unit | | **1737.315 mg/unit** | |
| Sum of Cannabinoids per Unit | | **1754.590 mg/unit** | |
| Total Cannabinoids per Unit | | **1754.590 mg/unit** | |

### DENSITY TEST RESULT

**0.9362 g/mL**

Tested 08/11/2023

**Method:** QSP 7870 - Sample Preparation

## Terpenoid Analysis

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

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

### 1 Menthol
A monoterpenoid alcohol with a fragrance that can be described as fresh, cool and herbal. It is responsible for the distinct odor of mint. It is frequently added to cigarettes and mouthwash as a flavorant. Found in mint, sunflower, micromeria, mountain mint, rose geranium, pennyroyal, tarragon, savory, basil, juniper, couch grass, rhubarb, acinos (basil thyme), ironwort, muña...etc.

### 2 Isopulegol
A monoterpenoid with a fragrance that can be described as woody and minty. It is also a constituent of toxic secretions of exploding ants. Found in eucalyptus, rosemary, citrus, lemon-verbena, micromeria, lemon balm...etc.

### 3 Borneol
A monoterpenoid alcohol with a fragrance that can be described as fresh, piney and woody. Found in forskohlii, rosemary, coriander, Scotch pine, black-jack, ginger, oregano, savory, feverfew, rose gum, Aztec marigold, pennyroyal, sakhalin fir...etc.

**TERPENOID TEST RESULTS -** 08/16/2023

| COMPOUND | LOD/LOQ (mg/g) | MEASUREMENT UNCERTAINTY (mg/g) | RESULT (mg/g) | RESULT (%) |
|---|---|---|---|---|
| Menthol | *0.008 / 0.025* | *±1.4453* | 46.325 | 4.6325 |
| Isopulegol | *0.005 / 0.016* | *±0.0037* | 0.116 | 0.0116 |
| Borneol | *0.005 / 0.016* | *±0.0024* | 0.072 | 0.0072 |
| 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 |
| $\Delta^3$-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 |
| β-Ocimene | *0.006 / 0.020* | *N/A* | ND | ND |
| γ-Terpinene | *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 |
| Camphor | *0.006 / 0.019* | *N/A* | ND | ND |
| Isoborneol | *0.004 / 0.012* | *N/A* | ND | ND |
| Terpineol | *0.009 / 0.031* | *N/A* | ND | ND |
| Nerol | *0.003 / 0.011* | *N/A* | ND | ND |
| Citronellol | *0.003 / 0.010* | *N/A* | ND | ND |
| 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 | *0.006 / 0.019* | *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** | | | 46.513 mg/g | 4.6513% |

## 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

**PESTICIDE TEST RESULTS** - 08/11/2023 PASS

| 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 |
| Diazinon | 0.02 / 0.05 | 0.2 | N/A | ND | PASS |
| Dichlorvos (DDVP) | 0.03 / 0.09 | ≥ LOD | N/A | ND | PASS |
| Dimethoate | 0.03 / 0.08 | ≥ LOD | N/A | ND | PASS |
| Dimethomorph | 0.03 / 0.09 | 20 | N/A | ND | PASS |
| Ethoprophos | 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 |
| Imazalil | 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 TEST RESULTS** - 08/11/2023 *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 |
| 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 |
| Parathion-methyl | 0.03 / 0.10 | ≥ 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 |
| Piperonyl Butoxide | 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 |
| Spirotetramat | 0.02 / 0.06 | 13 | N/A | ND | PASS |
| Spiroxamine | 0.03 / 0.08 | ≥ LOD | N/A | ND | PASS |
| 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

**MYCOTOXIN TEST RESULTS** - 08/11/2023 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 |

## Residual Solvents Analysis

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

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

RESIDUAL SOLVENTS TEST RESULTS - 08/11/2023 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 |
| n-Butane | 10 / 50 | 5000 | N/A | ND | PASS |
| n-Pentane | 20 / 50 | 5000 | N/A | ND | PASS |
| n-Hexane | 2 / 5 | 290 | N/A | ND | PASS |
| n-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 | | N/A | ND | |
| 2-Propanol (Isopropyl Alcohol) | 10 / 40 | | ±>189.6 | >6995 | |
| 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 |
| Dichloromethane (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

HEAVY METALS TEST RESULTS - 08/12/2023 PASS

| COMPOUND | LOD/LOQ (µg/g) | ACTION LIMIT (µg/g) | MEASUREMENT UNCERTAINTY (µg/g) | RESULT (µg/g) | RESULT |
|---|---|---|---|---|---|
| Arsenic | 0.02 / 0.1 | 1.5 | N/A | ND | PASS |
| Cadmium | 0.02 / 0.05 | 0.5 | N/A | ND | PASS |
| Lead | 0.04 / 0.1 | 0.5 | N/A | ND | PASS |
| Mercury | 0.002 / 0.01 | 3 | 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) - 08/12/2023 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 |
| *Yersinia* spp. | | ND | |
| *Listeria monocytogenes* | | ND | |

## Microbiology Analysis *Continued*

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

**Method:** QSP 6794 - Plating with 3M™ Petrifilm™

**MICROBIOLOGY TEST RESULTS (PLATING) -** 08/12/2023 **ND**

| COMPOUND | RESULT (cfu/g) |
|---|---|
| Total Aerobic Bacteria | ND |

## 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 -** 08/10/2023 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 Material | *>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 |

**NOTES**
COA amended to reflect requested assays.