

Cannabinoid Profile [MCR-TM-0011]

Analyst: JDM/SA/EB/TC

Test Date: 20 May 21

The sample was analyzed for cannabinoids via High Performance Liquid Chromatography (HPLC-UV). The collected data was compared to data collected from certified analytical reference standards at known concentrations.

Table 1 - S21-31399 Vape MH510-001 Vape Cannabinoid Testing

Analyte	Cannabinoid	Conc. (weight %)	Conc. (mg/g)	LOQ (weight %)	LOD (weight %)
CBDVA	Cannabidivarinic acid	ND	ND	0.10%	0.01%
CBDV	Cannabidivarin	ND	ND	0.10%	0.02%
CBDA	Cannabidiolic acid	ND	ND	0.10%	0.02%
CBGA	Cannabigerolic acid	ND	ND	0.10%	0.02%
CBG	Cannabigerol	3.4%	34.0	0.10%	0.04%
CBD	Cannabidiol	0.2%	2.0	0.10%	0.03%
THCV	Tetrahydrocannabivarin	1.0%	10.0	0.10%	0.01%
THCVA	Tetrahydrocannabivarinic acid	ND	ND	0.10%	0.03%
CBCV	Cannabichromevarin	ND	ND	0.10%	0.01%
CBN	Cannabinol	0.4%	4.0	0.10%	0.01%
CBNA	Cannabinolic acid	ND	ND	0.10%	0.01%
Δ9-THC	Δ9-Tetrahydrocannabinol	80.0%	800.0	0.10%	0.02%
Δ8-THC	Δ8-Tetrahydrocannabinol	ND	ND	0.10%	0.02%
CBL	Cannabicyclol	ND	ND	0.10%	0.02%
THCA	Tetrahydrocannabinolic acid	ND	ND	0.10%	0.01%
CBC	Cannabichromene	ND	ND	0.10%	0.01%
CBCA	Cannabichromenic acid	ND	ND	0.50%	0.05%
CBLA	Cannabicyclolic acid	ND	ND	0.10%	0.01%
CBT	Cannabicitran	0.9%	9.0	0.10%	0.02%

Note: There are no limits established by the Massachusetts Department of Public Health for cannabinoid concentrations. ND = Not Detected. LOQ = Limit of Quantitation. LOD = Limit of Detection.

Microbiological Screen [MCR-TM-0006] Analyst: SS/JG/TJS Test Date: 20-23 May 21

The sample was analyzed for microbiological contaminants via an automated Most Probable Number (MPN) methodology with cultured enrichments.

Table 2 - S21-31399 Vape MH510-001 Vape Microbiological Testing

Test ID	Test Analysis	Results	Unit	Limits	Disposition
21-31399-AC	Total Viable Aerobic Bacteria	<100	CFU/g	10 ⁴ CFU/g	Pass
21-31399-YM	Total Yeast and Mold	<100	CFU/g	10 ³ CFU/g	Pass
21-31399-CC	Total Coliforms	<100	CFU/g	10 ² CFU/g	Pass
21-31399-EB	Total Bile-Tolerant Gram Negative Bacteria	<100	CFU/g	10 ² CFU/g	Pass

Note: CFU = colony forming unit. Testing limits established by the Massachusetts Department of Public Health, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 6.

Pathogenic Bacterial Screen [MCR-TM-0012] Analyst: VLF Test Date: 22 May 21

The sample was analyzed for pathogenic bacterial contamination via a quantitative Polymerase Chain Reaction (qPCR).

Table 3 - S21-31399 Vape MH510-001 Vape Pathogen Testing

Test ID	Test Analysis	Result	Units	Limits	Disposition
S21-31399-ECPT	STEC	Not Detected	N/A	Not Detected in 1g	Pass
S21-31399-SPT	Salmonella	Not Detected	N/A	Not Detected in 1g	Pass

Note: Testing limits established by the Massachusetts Department of Public Health, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 6. NT = Not tested. STEC = Shiga Toxin producing E. coli

Mycotoxin Screen [MCR-TM-0013] Analyst: JM/VP/VB Test Date: 20 May 21

The sample was analyzed via Liquid Chromatography - Tandem Mass Spectrometry (LC-MS/MS).
 The collected data was compared to data collected from analytical reference standards at known concentrations.

Table 4 - S21-31399 Vape MH510-001 Vape Mycotoxin Testing

Test ID	Test Analysis	Result	LOD (ppb)	LOQ (ppb)	Limits (ppb)	Disposition
S21-31399-MY	Mycotoxin	Not Detected	4	12	20	Pass

Note: ND = Not Detected; LOD = Limit of Detection; LOQ = Limit of Quantitation; ppb = part per billion. Testing limits established by the Massachusetts Department of Public Health, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 6.

Heavy Metals Screen [MCR-TM-0008] Analyst: NM/VM Test Date: 20 May 21

The sample was analyzed via Inductively Coupled Plasma Mass Spectrometry. The collected data was compared to data collected from certified analytical reference standards at known concentrations.

Table 5 - S21-31399 Vape MH510-001 Vape Heavy Metal Testing

Test ID	Test Analysis	Result, ppb	LOD ppb	LOQ ppb	Limits ppb	Disposition	Limits (ingestion) ppb	Disposition (ingestion)
S21-31399-HM	Arsenic	ND	41.6	126.0	200	Pass	1500	Pass
S21-31399-HM	Cadmium	ND	60.3	182.7	200	Pass	500	Pass
S21-31399-HM	Mercury	ND	30.0	90.9	100	Pass	1500	Pass
S21-31399-HM	Lead	ND	21.5	65.3	500	Pass	1000	Pass

Note: ND = Not Detected; LOD = Limit of Detection; LOQ = Limit of Quantitation; BQL = Below Quantitation Limit; ppb = part per billion. Testing limits established by the Massachusetts Department of Public Health, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 4.

VC Screen [PCR-TM-0004]

Analyst: JN

Test Date: 18 May 21

The sample was analyzed via Gas Chromatography – Flame Ionization Detection with Headspace Autosampler. The collected data was compared to data collected from certified analytical reference standards at known concentrations.

Table 6 - S21-31399 Vape MH510-001 Vape Residual Solvent Testing

Test ID	Analyte	Result (ppm)	LOD (ppm)	LOQ (ppm)	Limits (ppm)	*USP Result (ppm)	Disposition
S21-31399-VC	Ethanol	ND	815	2716	5000	ND	Pass

Note: ND = Not Detected; LOD = Limit of Detection; LOQ = Limit of Quantitation; BQL = Below Quantitation Limit; ppm = part per million. Testing limits established by the Massachusetts Department of Public Health, Protocol for Sampling and Analysis of Finished Medical Marijuana Products and Marijuana-Infused Products for Massachusetts Registered Medical Marijuana Dispensaries, Exhibit 7. The uncertainty budget for propane is 0.12 ppm; n-Butane - 0.10 ppm; Ethanol - 0.15 ppm. *USP 34 General Notices 7.20.

Vitamin E Acetate Screen [MCR-TM-0014]

Analyst: JDM/SA/AI

Test Date: 19 May 21

The sample was analyzed via High Performance Liquid Chromatography (HPLC-UV).

Table 7 - S21-31399 Vape MH510-001 Vape Vitamin E Acetate Testing

Test ID	Test Analysis	Result (weight %)	LOD (weight %)	LOQ (weight %)
S21-31399-VEA	Vitamin E Acetate	ND	0.4	1.4

Note: There are no limits established by the Massachusetts Department of Public Health for Vitamin E Acetate concentrations. ND = Not Detected. LOQ = Limit of Quantitation. LOD = Limit of Detection.

QA/QC

Cannabinoid Profile [MCR-TM-0011]

Analyst: EB/AL

Test Date: 20 May 21

The sample data for certified reference standards was collected at known concentrations of cannabinoids in solution.

QC-0.025 mg/mL 19 cannabinoid multi-component 5/11/2021

ID	Cannabinoid	Nominal Prep Conc (mg/mL)	Measured Conc. (mg/mL)	Recovery (%)
CBDVA	Cannabidivarinic acid	0.025	0.023	92%
CBDV	Cannabidivarin	0.025	0.023	90%
CBDA	Cannabidiolic acid	0.025	0.023	92%
CBGA	Cannabigerolic acid	0.025	0.023	92%
CBG	Cannabigerol	0.025	0.022	88%
CBD	Cannabidiol	0.025	0.024	96%
THCV	Tetrahydrocannabivarin	0.025	0.022	88%
THCVA	Tetrahydrocannabivarinic acid	0.025	0.023	92%
CBCV	Cannabichromevarin	0.025	0.023	92%
CBN	Cannabinol	0.025	0.023	92%
CBNA	Cannabinolic acid	0.025	0.024	96%
Δ9-THC	Δ9-Tetrahydrocannabinol	0.025	0.023	90%
Δ8-THC	Δ8-Tetrahydrocannabinol	0.025	0.023	90%
CBL	Cannabicyclol	0.025	0.024	94%
THCA	Tetrahydrocannabinolic acid	0.025	0.024	96%
CBC	Cannabichromene	0.025	0.023	92%
CBCA	Cannabichromenic acid	0.025	0.023	92%
CBLA	Cannabicyclic acid	0.025	0.023	92%
CBT	Cannabicitran	0.025	0.025	100%

Criteria for successful analysis is QC recovery to be ≤20% above or below nominal.

Microbiological Screen [MCR-TM-0006]

Analyst: TJS

Test Date: 19 May 21

Quality control checks are performed to confirm that the equipment used for reading incubated microbiological cultures, which are done at various concentrations, are working correctly and that the fluorescence readings are accurate. QC checks are performed within 30 days of the recorded measurements.

Date of most recent QC check: Tempo QC 05/19/2021
 Status: Pass

Pathogenic Bacterial Screen [MCR-TM-0012]

Analyst: VLF

Test Date: 22 May 21

Quality control checks are performed to validate the equipment used for reading incubated pathogenic bacterial cultures. QC checks are run with every analysis.

Date	QC Check	Pathogen	Result	Disposition
5/22/2021	Control (+)	STEC	Positive	Pass
5/22/2021	Control (-)	STEC	Negative	Pass
5/22/2021	Control (+)	Salmonella	Positive	Pass
5/22/2021	Control (-)	Salmonella	Negative	Pass

Mycotoxin Screen [MCR-TM-0013]

Analyst: JM/VP/VB

Test Date: 20 May 21

Solutions were spiked with toxin reference materials at given concentrations and tested for toxin presence.

QC Sample	Total Toxins (ng)	Result
Negative Control	0	Negative
Positive Control 5 ppb	5.0	Positive

Heavy Metals Screen [MCR-TM-0008]

Analyst: NM/VM

Test Date: 20 May 21

QC samples were prepared at target concentrations and injected at the end of the sequence.

Analyte	Prepared analyte concentration, ppb	Analyte measured, ppb	QC recovery (%)
Arsenic (As)	1.00	0.94	94%
Cadmium (Cd)	1.00	0.91	91%
Mercury (Hg)	0.50	0.48	96%
Lead (Pb)	3.00	3.03	101%

Criteria for successful analysis is QC recovery to be ≤20% above or below nominal.

VC Screen [MCR-TM-0007]

Analyst: JN/JK

Test Date: 18 May 21

A QC sample was prepared at a known concentration and injected.

Analyte	µg analyte detected	Nominal analyte, µg	Recovery
Ethanol	189	199	95%

Criteria for successful analysis is QC recovery to be ≤30% above or below nominal.

Vitamin E Acetate Screen [MCR-TM-0014]

Analyst: KT

Test Date: 19 May 21

The sample data for reference standards was collected for a known concentration of Vitamin E Acetate in solution.

Analyte	Nominal Prep Conc (mg/mL)	Measured Conc. (mg/mL)	QC recovery (%)
Vitamin E Acetate	0.125	0.12	96%

Criteria for successful analysis is QC recovery to be ≤20% above or below nominal.

END OF REPORT