



Certificate ID: **57511-234**

Received: **6/19/19**

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Client Sample ID: **190005CBF**

Lot Number:

Matrix: **Concentrates/Extracts - Isolate**



Authorization: Jon Podgorni, Lab Manager	Signature: <i>Jon Podgorni</i>	Date: 8/6/2019
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The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2017. I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**CN: Cannabinoid Profile & Potency [WI-10-17 & WI-10-17-01]**

Analyst: **LG**

Test Date: **6/20/2019**

The client sample was analyzed for plant-based cannabinoids by Liquid Chromatography (LC). The collected data was compared to data collected for certified reference standards at known concentrations.

**57511-CN**

ID	Weight %	Concentration (mg/g)			
D9-THC	ND	ND			
THCV	ND	ND			
CBD	99.40	994.00			
CBDV	0.10	1.02			
CBG	ND	ND			
CBC	0.01	0.08			
CBN	ND	ND			
THCA	ND	ND			
CBDA	ND	ND			
CBGA	ND	ND			
D8-THC	ND	ND			
exo-THC	ND	ND			
Total	99.51	995.10	0%	Cannabinoids (wt%)	99.4%
Max THC	-	-			
Max CBD	99.40	994.00			

Max THC (and Max CBD) are calculated values for total cannabinoids after heating, assuming complete decarboxylation of the acid to the neutral form. It is calculated based on the weight loss of the acid group during decarboxylation:  $\text{Max THC} = (0.877 \times \text{THCA}) + \text{THC}$ . This calculation does not include other cannabinoid isomers (eg. D8-THC and exo-THC). ND = None detected above the limits of detection (LLD)

**HM: Heavy Metal Analysis [WI-10-13]**

Analyst: JFD

Test Date: 6/26/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**57511-HM**

Symbol	Metal	Conc. <sup>1</sup>	Units	MDL	Use Limits <sup>2</sup>		Units	Status
					All	Ingestion		
As	Arsenic	ND	µg/kg	4	200	1500	µg/kg	PASS
Cd	Cadmium	ND	µg/kg	1	200	500	µg/kg	PASS
Hg	Mercury	ND	µg/kg	2	100	1500	µg/kg	PASS
Pb	Lead	3	µg/kg	2	500	1000	µg/kg	PASS

1) ND = None detected to Lowest Limits of Detection (LLD)

2) MA Dept. of Public Health: Protocol for MMJ and MIPS, Exhibit 4(a) for all products.

3) USP exposure limits based on daily oral dosing of 1g of concentrate for a 110 lb person.

**MB1: Microbiological Contaminants [WI-10-09]**

Analyst: MM

Test Date: 6/21/2019

This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

**57511-MB1**

Symbol	Analysis	Results	Units	Limits*	Status
AC	Total Aerobic Bacterial Count	<100	CFU/g	10,000 CFU/g	PASS
CC	Total Coliform Bacterial Count	<100	CFU/g	100 CFU/g	PASS
EB	Total Bile Tolerant Gram Negative Count	<100	CFU/g	100 CFU/g	PASS
YM	Total Yeast & Mold	<100	CFU/g	1,000 CFU/g	PASS

Note: All recorded Microbiological tests are within the established limits.

**TP: Terpenes Profile [WI-10-27]**

Analyst: CMA

Test Date: 6/25/2019

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations. All values are semiquantitative estimates based on recorded peak areas relative to terpene calibration data.

**57511-TP**

Compound	ppm	Terpene Profile	Compound	ppm	Terpene Profile	
beta-myrcene			camphene			
isopulegol			L-fenchone			
menthol			beta-pinene			
cis-nerolidol			eucalyptol			
trans-nerolidol			alpha-terpinene			
gamma-terpinene			delta-3-carene			
alpha-bisabolol			alpha-pinene			
linalool			D-limonene			
beta-caryophyllene			geraniol			
caryophyllene oxide			cis-beta-ocimene			
guaiol			alpha-ocimene			
sabinene			alpha-phellandrene			
alpha-humulene			terpinolene			
p-cymene						
	ppm 0.00	5.00	10.00	ppm 0.00	5.00	10.00

Total Terpene: <0.1 wt%

**VC: Analysis of Volatile Organic Compounds [WI-10-28]**

Analyst: CMA

Test Date: 6/21/2019

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations.

**57511-VC**

Compound	CAS	Amount <sup>1</sup>	Limit <sup>2</sup>	RL	Status
Propane	74-98-6	ND	1,000 ppm	200	PASS
Isobutane	75-28-5	ND	1,000 ppm	200	PASS
Butane	106-97-8	ND	1,000 ppm	200	PASS
Methanol	67-56-1	ND	3,000 ppm	200	PASS
Ethanol	64-17-5	ND	5,000 ppm	200	PASS
Acetone	67-64-1	257 ppm	5,000 ppm	200	PASS
Isopropanol	67-63-0	ND	5,000 ppm	200	PASS
Acetonitrile	75-05-8	ND	410 ppm	200	PASS
Hexane	110-54-3	ND	290 ppm	200	PASS
Heptane	142-82-5	ND	5,000 ppm	200	PASS

1) ND = Not detected at a level greater than the Reporting Limit (RL).

2) In ppm, based on USP recommended limits for residual solvents, adopted by the Massachusetts Department of Public Health on 3/31/16. Butane/Propane limits are based on limits established for state of Colorado.

**END OF REPORT**