

Certificate ID: **62900**

 Received: **8/26/19**


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Mana Artisan Botanics
75-5665 Kuakini Hwy, Suite 3
Kailua Kona, HI 96740
Attn: Steve Sakala

 Client Sample ID: **Hemp Oil 3X**

 Lot Number: **HO-3X**

 Matrix: **Tincture/Cooking Oil - Other - Please Spe**

Authorization: Jon Podgorni, Lab Manager	Signature: 	Date: 9/9/2019
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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.

EA: Elemental Analysis [WI-10-13]

 Analyst: **JFD**

 Test Date: **9/4/2019**

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.

62900-EA

Symbol	Metal	Conc. ¹	MDL	Limits ²	Status
Al	Aluminum	415 ug/kg	5 ug/kg	-	
As	Arsenic	ND	4 ug/kg	1500 ug/kg	PASS
Cd	Cadmium	ND	1 ug/kg	500 ug/kg	PASS
Ca	Calcium	1,351 ug/kg	500 ug/kg	-	
Cr	Chromium	ND	5 ug/kg	1100000 ug/kg	PASS
Co	Cobalt	ND	10 ug/kg	5000 ug/kg	PASS
Cu	Copper	791 ug/kg	500 ug/kg	300000 ug/kg	PASS
Fe	Iron	1,188 ug/kg	5 ug/kg	-	
Pb	Lead	3 ug/kg	2 ug/kg	500 ug/kg	PASS
Mg	Magnesium	17,022 ug/kg	500 ug/kg	-	
Mn	Manganese	754 ug/kg	500 ug/kg	-	
Hg	Mercury	ND	2 ug/kg	3000 ug/kg	PASS
Mo	Molybdenum	ND	50 ug/kg	300000 ug/kg	PASS
Ni	Nickel	ND	50 ug/kg	20000 ug/kg	PASS
P	Phosphorus	ND	500 ug/kg	-	
K	Potassium	20,287 ug/kg	5 ug/kg	-	
Se	Selenium	ND	10 ug/kg	-	
Ag	Silver	ND	10 ug/kg	15000 ug/kg	PASS
S	Sulfur	10,335 ug/kg	5 ug/kg	-	
Sn	Tin	ND	5000 ug/kg	600000 ug/kg	PASS
Zn	Zinc	191 ug/kg	5 ug/kg	-	

1) ND = None detected to the Method Detection Limit (MDL)
 2) USP recommended maximum daily limits for oral drug product.

MB1: Microbiological Contaminants [WI-10-09]

Analyst: MM

Test Date: 8/30/2019

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.

62900-MB1

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

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

PST: Pesticide Analysis [WI-10-11]

Analyst: RAS

Test Date: 9/9/2019

The client sample was analyzed for pesticides using Liquid Chromatography with Mass Spectrometric detection (LC/MS/MS). The method used for sample prep was based on the European method for pesticide analysis (EN 15662).

62900-PST

Analyte	CAS	Result	Units	LLD	Limits (ppb)	Status
Abamectin B1a	65495-55-3	ND	ppb	0.20	300	PASS
Abamectin B1b	65195-56-4	ND	ppb	0.20	300	*
Azoxystrobin	131860-33-8	ND	ppb	0.10	40000	PASS
Bifenazate	149877-41-8	ND	ppb	0.10	5000	PASS
Bifenthrin	82657-04-3	ND	ppb	0.20	500	PASS
Cyfluthrin	68359-37-5	ND	ppb	0.50	1000	PASS
Daminozide	1596-84-5	ND	ppb	10.00	10	*
Etoxazole	153233-91-1	ND	ppb	0.10	1500	PASS
Fenoxycarb	72490-01-8	ND	ppb	0.10	10	PASS
Imazalil	35554-44-0	ND	ppb	0.10	10	PASS
Imidacloprid	138261-41-3	ND	ppb	0.10	3000	PASS
Myclobutanil	88671-89-0	ND	ppb	0.10	9000	PASS
Paclobutrazol	76738-62-0	ND	ppb	0.10	10	PASS
Piperonyl butoxide	51-03-6	ND	ppb	0.10	8000	PASS
Pyrethrin	8003-34-7	ND	ppb	0.1	1000	PASS
Spinosad	168316-95-8	ND	ppb	0.1	3000	PASS
Spiromesifen	283594-90-1	ND	ppb	0.10	12000	PASS
Spirotetramat	203313-25-1	ND	ppb	0.10	13000	PASS
Trifloxystrobin	141517-21-7	ND	ppb	0.10	30000	PASS

* Testing limits for ingestion established by the State of California: CCR, Title 16, Division 42, Chapter 5, Section 5313. ND indicates "none detected" above the lower limit of detection (LLD). Analytes marked with (*) indicate analytes for which no recovery was observed for a pre-spiked matrix sample.

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

Analyst: CMA

Test Date: 9/3/2019

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.

62900-VC

Compound	CAS	Amount ¹	Limit ²	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
Pentane	109-66-0	ND	5,000 ppm	200	PASS
Ethanol	64-17-5	ND	5,000 ppm	200	*
Acetone	67-64-1	ND	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 for cannabis concentrates and extracts on 3/31/16. Butane/Propane limits are based on limits established for state of Colorado.

(*) For ethanol, as many formulations contain flavorings based on ethanol extracts of natural products, no status has been assigned.

END OF REPORT