

Certificate of Quality Assurance

PRODUCT NAME: Natural Tincture
PRODUCT STRENGTH: 1500 mg
LOT NUMBER: TNAT1500-T031
OIL BATCH NUMBER: CON019-24
DATE OF MANUFACTURE: 3/19/19
Expiration date is 18 months under sealed conditions.
DATE OF ANALYSIS: 3/19/19
ACTIVE INGREDIENT: Phytocannabinoid-Rich Hemp Oil
INACTIVE INGREDIENTS: Grapeseed Oil, Hempseed Oil



Physical Attributes of Raw Hemp Oil

Attribute	Acceptance Criteria	Result
Appearance	Viscous Dark Amber Oil Possible Crystal Formation	Conforms
Aroma	Characteristic Hemp Aroma	Conforms
Dissolution	Not Cloudy or Turbid, Characteristic Color	Conforms
Microbial Testing	Total Aerobic Count <2000 cfu/g Total Yeast and Mold <2000 cfu/g	Conforms

Potency of Raw Hemp Oil

Cannabinoid	Weight %
CBD	87.88
CBG	0.05
CBN	<0.03
THC	ND
CBC	<0.03
THC-A	ND
CBD-A	<0.03

Pesticides*

Compound	Result	Compound	Result
Acequinocil	ND	Spinosad	ND
Pyrethrium	ND	Spirotetramat	ND
Spiromesifin	ND	Bifenazate	ND
Abamectin	ND	Fenoxycarb	ND
Imidacloprid	ND	Paclobutrazol	ND

Terpene Results*

Compound	Weight %	Compound	Weight %
β -Bisabolene	1.0-3.0	Camphene	0.1-0.2
β -Farnesene	1.0-2.0	E-Farnesene	0.1-0.2
Gualol	0.5-2.0	Farnesol	0.1-0.2
β -Maaliene	0.5-2.0	α -Bisabolol	< 0.1
Calarene	0.5-1.5	p-Cymene	< 0.1
β -Caryophyllene	0.1-1.0	Linalool	< 0.1
α -Humulene	0.1-1.0	Myrcene	< 0.1
Cadinene	0.1-1.0	Phytol	< 0.1
α -Gurjunene	0.1-0.5	Isopulegol	< 0.1
d-Limonene	0.1-0.5	Terpinene	< 0.1
Nerolidol	0.1-0.5	Geraniol	< 0.1
α -Pinene	0.1-0.5	Myrcene	< 0.1
Aristolene	0.1-0.3	γ -Terpinene	< 0.1
Eucalyptol	0.1-0.2	δ -3-Carene	< 0.1

Residual Solvents*

Solvent	Weight %
Acetone	Compliant with USP<467>
Butane	Compliant with USP<467>
Ethanol	Compliant with USP<467>
Hexane	Compliant with USP<467>
Isobutane	Compliant with USP<467>
Isopropanol	Compliant with USP<467>
Pentane	Compliant with USP<467>

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JOYTM
ORGANICS

Heavy Metals*

Metal	Result
Cadmium	Compliant with USP<233>
Lead	Compliant with USP<233>
Arsenic	Compliant with USP<233>
Mercury	Compliant with USP<233>

Analysis Results for Finished Product

Attribute	Acceptance Criteria	Result
Appearance	Light Yellow to Green Liquid	Conforms
Aroma	Characteristic Hemp Odor	Conforms
Cannabidiol Content	95% to 110% of Label Claim	Conforms
THC Content	None Detected	Conforms

* Results based on testing of multiple batches of hemp oil raw material.

Certified by:



Matthew Plenert, Ph.D
Head Chemist and Quality Manager

4-5-19

Date