

Signed On _____



Certificate of Analysis

PASSED

Liberty Health Sciences, FL

18770 N CR 225

Gainesville, FL, 32609, US

Telephone: (833) 254-4877

Email: Qualityassurance@libertyhealthsciences.com

Sample : GA20719001-015

Harvest/Lot ID: SOFS100-2207-11902

Batch# : DF-BLZK-2207-11797

Sampled : 07/19/22

Ordered : 07/19/22

Sample Size Received : 16 gram

Total Batch Size : 575 units

Completed : 07/22/22 Expires: 07/22/23

Sample Method : SOP.T.20.010

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Terpenes

TESTED

Terpenes	LOD (%)	mg/unit	%	Result (%)	Terpenes	LOD (%)	mg/unit	%	Result (%)
TOTAL TERPENES	0.007	45.83	4.583		CAMPHOR	0.013	ND	ND	
TOTAL TERPINEOL	0.007	ND	ND		BORNEOL	0.013	ND	ND	
CAMPENE	0.007	ND	ND		GERANIOL	0.007	ND	ND	
BETA-MYRCENE	0.007	<0.2	<0.02		PULEGONE	0.007	ND	ND	
3-CARENE	0.007	ND	ND		ALPHA-CEDRENE	0.007	ND	ND	
ALPHA-PHELLANDRENE	0.007	ND	ND		ALPHA-HUMULENE	0.007	0.79	0.079	
OCIMENE	0.007	ND	ND		TRANS-NEROLIDOL	0.007	<0.2	<0.02	
EUCALYPTOL	0.007	ND	ND		GUAIOL	0.007	ND	ND	
LINALOOL	0.007	0.7	0.07		Analyzed by: 3404, 3655, 3205, 3303, 2155 Weight: 0.926g Extraction date: 07/19/22 14:59:46 Extracted by: 3655				
FENCHONE	0.007	ND	ND		Analysis Method : SOP.T.30.061A.FL, SOP.T.40.061A.FL Analytical Batch : GA047040TER Instrument Used : GA-GCMS-002 QP2010S Running on : 07/19/22 16:49:24 Reviewed On : 07/20/22 12:28:59 Batch Date : 07/18/22 17:13:52				
ISOPULEGOL	0.007	ND	ND		Dilution : 50 Reagent : 060922.R22; 050322.48; 010421.48 Consumables : 947.109; H20364; 9291.271; LLS-00-0005; 89012-780; RONB32898; 000000146137; 210268; 212516 Pipette : GA-005; GA-011; GA-146; GA-151				
ISOBORNEOL	0.007	ND	ND		Terpenoid testing is performed utilizing Gas Chromatography Mass Spectrometry.				
HEXAHYDROTHYMOL	0.007	ND	ND						
NEROL	0.007	ND	ND						
GERANYL ACETATE	0.007	ND	ND						
BETA-CARYOPHYLLENE	0.007	2.32	0.232						
VALENCENE	0.007	ND	ND						
CIS-NEROLIDOL	0.007	ND	ND						
CEDROL	0.007	ND	ND						
CARYOPHYLLENE OXIDE	0.007	ND	ND						
FARNESENE	0	<0.01	ND						
ALPHA-BISABOLOL	0.007	0.37	0.037						
ALPHA-PINENE	0.007	ND	ND						
SABINENE	0.007	ND	ND						
BETA-PINENE	0.007	ND	ND						
ALPHA-TERPINENE	0.007	ND	ND						
LIMONENE	0.007	41.65	4.165						
GAMMA-TERPINENE	0.007	ND	ND						
TERPINOLENE	0.007	ND	ND						
SABINENE HYDRATE	0.007	ND	ND						
FENCHYL ALCOHOL	0.007	<0.2	<0.02						
Total (%)				4.583					



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<div>  Pesticides </div>						PASSED					
Pesticide	LOD	Units	Action Level	Pass/Fail	Result	Pesticide	LOD	Units	Action Level	Pass/Fail	Result
TOTAL CONTAMINANT LOAD (PESTICIDES)	0.01	PPM	5	PASS	ND	PACLOBUTRAZOL	0.01	ppm	0.1	PASS	ND
TOTAL DIMETHOMORPH	0.01	PPM	0.2	PASS	ND	PHOSMET	0.01	ppm	0.1	PASS	ND
TOTAL PERMETHRIN	0.01	ppm	0.1	PASS	ND	PIPERONYL BUTOXIDE	0.01	ppm	3	PASS	ND
TOTAL SPINETORAM	0.01	PPM	0.2	PASS	ND	PRALLETHRIN	0.01	ppm	0.1	PASS	ND
TOTAL SPINOSAD	0.01	ppm	0.1	PASS	ND	PROCONAZOLE	0.01	ppm	0.1	PASS	ND
ABAMECTIN B1A	0.01	ppm	0.1	PASS	ND	PROPOXUR	0.01	ppm	0.1	PASS	ND
ACEPHATE	0.01	ppm	0.1	PASS	ND	PYRETHRINS	0.01	ppm	0.5	PASS	ND
ACEQUINOXYL	0.01	ppm	0.1	PASS	ND	PYRIDABEN	0.01	ppm	0.2	PASS	ND
ACETAMIPRID	0.01	ppm	0.1	PASS	ND	SPIROMESIFEN	0.01	ppm	0.1	PASS	ND
ALDICARB	0.01	ppm	0.1	PASS	ND	SPIROTETRAMAT	0.01	ppm	0.1	PASS	ND
AZOXYSTROBIN	0.01	ppm	0.1	PASS	ND	SPIROXAMINE	0.01	ppm	0.1	PASS	ND
BIFENAZATE	0.01	ppm	0.1	PASS	ND	TEBUCONAZOLE	0.01	ppm	0.1	PASS	ND
BIFENTHRIN	0.01	ppm	0.1	PASS	ND	THIACLOPRID	0.01	ppm	0.1	PASS	ND
BOSCALID	0.01	PPM	0.1	PASS	ND	THIAMETHOXAM	0.01	ppm	0.5	PASS	ND
CARBARYL	0.01	ppm	0.5	PASS	ND	TRIFLOXYSTROBIN	0.01	ppm	0.1	PASS	ND
CARBOFURAN	0.01	ppm	0.1	PASS	ND	PENTACHLORONITROBENZENE (PCNB) *	0.01	PPM	0.15	PASS	ND
CHLORANTRANILIPROLE	0.01	ppm	1	PASS	ND	PARATHION-METHYL *	0.01	PPM	0.1	PASS	ND
CHLORMEQUAT CHLORIDE	0.01	ppm	1	PASS	ND	CAPTAN *	0.07	PPM	0.7	PASS	ND
CHLORPYRIFOS	0.01	ppm	0.1	PASS	ND	CHLORDANE *	0.01	PPM	0.1	PASS	ND
CLOFENTZINE	0.01	ppm	0.2	PASS	ND	CHLORFENAPYR *	0.01	PPM	0.1	PASS	ND
COUMAPHOS	0.01	ppm	0.1	PASS	ND	CYFLUTHRIN *	0.05	PPM	0.5	PASS	ND
DAMINOZIDE	0.01	ppm	0.1	PASS	ND	CYPERMETHRIN *	0.05	PPM	0.5	PASS	ND
DIAZINON	0.01	ppm	0.1	PASS	ND						
DICHLORVOS	0.01	ppm	0.1	PASS	ND	Analyzed by:	Weight:	Extraction date:	Extracted by:		
DIMETHOATE	0.01	ppm	0.1	PASS	ND	3404, 3655, 3192, 3303, 3317	1.0469g	07/20/22 10:00:48	3655		
ETHOPROPHOS	0.01	ppm	0.1	PASS	ND	Analysis Method :					
ETOFENPROX	0.01	ppm	0.1	PASS	ND	SOP.T.30.101.FL, SOP.T.30.102.FL, SOP.T.30.151.FL, SOP.T.40.101.FL, SOP.T.40.102.FL,					
ETOXAZOLE	0.01	ppm	0.1	PASS	ND	SOP.T.40.151.FL					
FENHEXAMID	0.01	ppm	0.1	PASS	ND	Analytical Batch :					
FENOXYCARB	0.01	ppm	0.1	PASS	ND	GA047041PES		Reviewed On :	07/21/22 11:10:35		
FENPYROXIMATE	0.01	ppm	0.1	PASS	ND	Instrument Used :		Batch Date :	07/18/22 17:14:16		
FIPRONIL	0.01	ppm	0.1	PASS	ND	GA-LCMS-001 PES					
FLONICAMID	0.01	ppm	0.1	PASS	ND	Running on :					
FLUDIOXONIL	0.01	ppm	0.1	PASS	ND	07/20/22 12:24:36					
HEXYTHIAZOX	0.01	ppm	0.1	PASS	ND	Dilution :					
IMAZALIL	0.01	ppm	0.1	PASS	ND	10					
IMIDACLOPRID	0.01	ppm	0.4	PASS	ND	Reagent :					
KRESOXIM-METHYL	0.01	ppm	0.1	PASS	ND	061922.R02; 061922.R04; 070822.R34; 050621.01					
MALATHION	0.01	ppm	0.2	PASS	ND	Consumables :					
METALAXYL	0.01	ppm	0.1	PASS	ND	947.109; H20364; LLS-00-0005; 89012-780; 296055173; 210268					
METHIOCARB	0.01	ppm	0.1	PASS	ND	Pipette :					
METHOMYL	0.01	ppm	0.1	PASS	ND	GA-002					
MEVINPHOS	0.01	ppm	0.1	PASS	ND	Testing for agricultural agents is performed utilizing Liquid Chromatography Triple-Quadrupole Mass Spectrometry and Gas Chromatography Triple-Quadrupole Mass Spectrometry in accordance with F.S. Rule 64ER20-39.					
MYCLOBUTANIL	0.01	ppm	0.1	PASS	ND	Analyzed by:	Weight:	Extraction date:	Extracted by:		
NALED	0.01	ppm	0.25	PASS	ND	3404, 3192, 3317, 3303	1.0469g	07/20/22 10:00:48	3655		
OXAMYL	0.01	ppm	0.5	PASS	ND	Analysis Method :					
						SOP.T.30.060, SOP.T.40.060					
						Analytical Batch :					
						GA047155VOL		Reviewed On :	07/21/22 11:24:26		
						Instrument Used :		Batch Date :	07/20/22 11:25:55		
						GA-GCMS-006					
						Running on :					
						07/20/22 14:17:53					
						Dilution :					
						100					
						Reagent :					
						061922.R02; 061922.R04; 070822.R34; 050621.01; 070822.R07					
						Consumables :					
						947.109; H20364; LLS-00-0005; 89012-780; 296055173; 55447-U.11925903; 944C4 944; 210268; 212516					
						Pipette :					
						GA-002; GA-006; GA-013					
						Testing for agricultural agents is performed utilizing Liquid Chromatography Triple-Quadrupole Mass Spectrometry and Gas Chromatography Triple-Quadrupole Mass Spectrometry in accordance with F.S. Rule 64ER20-39.					



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Sample Method : SOP.T.20.010

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Residual Solvents

PASSED

Solvents	LOD	Units	Action Level	Pass/Fail	Result
METHANOL	25	ppm	250	PASS	ND
ETHANOL	500	ppm	5000	PASS	ND
PENTANES (N-PENTANE)	75	ppm	750	PASS	ND
ETHYL ETHER	50	ppm	500	PASS	ND
ACETONE	75	ppm	750	PASS	ND
2-PROPANOL	50	ppm	500	PASS	ND
ACETONITRILE	6	ppm	60	PASS	ND
DICHLOROMETHANE	12.5	ppm	125	PASS	ND
N-HEXANE	25	ppm	250	PASS	ND
ETHYL ACETATE	40	ppm	400	PASS	ND
BENZENE	0.1	ppm	1	PASS	ND
HEPTANE	500	ppm	5000	PASS	ND
TOLUENE	15	ppm	150	PASS	ND
TOTAL XYLENES	15	ppm	150	PASS	ND
PROPANE	500	ppm	5000	PASS	ND
CHLOROFORM	0.2	ppm	2	PASS	ND
BUTANES (N-BUTANE)	500	ppm	5000	PASS	ND
1,2-DICHLOROETHANE	0.2	ppm	2	PASS	ND
ETHYLENE OXIDE	0.5	ppm	5	PASS	ND
1,1-DICHLOROETHENE	0.8	ppm	8	PASS	ND
TRICHLOROETHYLENE	2.5	ppm	25	PASS	ND

Analyzed by:

N/A

Weight:

N/A

Extraction date:

N/A

Extracted by:

N/A

Analysis Method : SOP.T.40.041.FL

Analytical Batch : GA04707450L

Instrument Used : GA-GCMS-004 QP2020NX

Running on : 07/19/22 12:57:15

Reviewed On : 07/20/22 12:04:48

Batch Date : 07/19/22 10:33:06

Dilution : N/A

Reagent : N/A

Consumables : 27296; 854996

Pipette : N/A

Residual solvents analysis is performed utilizing Gas Chromatography Mass Spectrometry in accordance with with F.S. Rule 64ER20-39.



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 Microbial PASSED						 Mycotoxins PASSED					
Analyte	LOD	Units	Result	Pass / Fail	Action Level	Analyte	LOD	Units	Result	Pass / Fail	Action Level
ESCHERICHIA COLI SHIGELLA SPP			Not Present	PASS		AFLATOXIN B2	0.002	ppm	ND	PASS	0.02
SALMONELLA SPECIFIC GENE			Not Present	PASS		AFLATOXIN B1	0.002	ppm	ND	PASS	0.02
ASPERGILLUS FLAVUS			Not Present	PASS		OCHRATOXIN A	0.002	ppm	ND	PASS	0.02
ASPERGILLUS FUMIGATUS			Not Present	PASS		AFLATOXIN G1	0.002	ppm	ND	PASS	0.02
ASPERGILLUS TERREUS			Not Present	PASS		AFLATOXIN G2	0.002	ppm	ND	PASS	0.02
ASPERGILLUS NIGER			Not Present	PASS							
TOTAL YEAST AND MOLD	10	CFU/g	<10	PASS	100000						
Analyzed by: 3404, 1790, 3209, 2821, 1541 Weight: 0.85g Extraction date: 07/19/22 14:17:26 Extracted by: 1790 Analysis Method : SOP.T.40.041, SOP.T.40.043, SOP.T.40.045, SOP.T.40.056B, SOP.T.40.058.FL, SOP.T.40.208 Analytical Batch : GA047096MIC Instrument Used : GA-TYM-001 Tempo Filler and Reader Running on : 07/19/22 15:53:29 Dilution : 90 Reagent : 060122.05; 032822.02 Consumables : 2303260; 2303190; 2304090; 2305240; 61630-123C6-123E Pipette : GA-154; GA-186; GA-213 Microbial testing is performed utilizing various technologies including: PCR, RTPCR, MPN, and traditional culture based techniques in accordance with F.S. Rule 64ER20-39.						Analyzed by: 3404, 3192, 3303, 3317 Weight: 1.0469g Extraction date: 07/20/22 10:00:48 Extracted by: 3655 Analysis Method : SOP.T.30.101.FL, SOP.T.40.101.FL, SOP.T.30.102.FL, SOP.T.40.102.FL Analytical Batch : GA047156MYC Instrument Used : GA-LCMS-001 MYC Running on : 07/20/22 12:26:03 Dilution : 10 Reagent : 061922.R02; 061922.R04; 070822.R34; 050621.01 Consumables : 947.109; H20364; LLS-00-0005; 89012-780; 296055173; 944C4 944J; 210268; 212516 Pipette : GA-002; GA-006; GA-013 Mycotoxins testing utilizing Liquid Chromatography with Triple-Quadrupole Mass Spectrometry in accordance with F.S. Rule 64ER20-39.					
Heavy Metals PASSED											
Metal	LOD	Units	Result	Pass / Fail	Action Level						
TOTAL CONTAMINANT LOAD METALS	0.11	PPM	ND	PASS	1.1						
ARSENIC	0.02	PPM	ND	PASS	0.2						
CADMIUM	0.02	PPM	ND	PASS	0.2						
MERCURY	0.02	PPM	ND	PASS	0.2						
LEAD	0.05	PPM	ND	PASS	0.5						
Analyzed by: 3404, 3571, 3317, 1541 Weight: 0.452g Extraction date: 07/20/22 10:47:28 Extracted by: 3571 Analysis Method : SOP.T.30.081.FL, SOP.T.30.082.FL, SOP.T.40.081.FL, SOP.T.40.082.FL Analytical Batch : GA047039HEA Instrument Used : GA-ICPMS-002 Running on : N/A Dilution : 100 Reagent : 052422.R35; 070522.R18; 010421.51; 071522.04; 071522.R33; 071922.R23; 071922.R24; 042022.R45 Consumables : GA-194; GA-195; CGR0114; 12455-202CD-202C; 210268; L2019501 Pipette : GA-012; GA-183; GA-193 Heavy Metals analysis is performed using Inductively Coupled Plasma Mass Spectrometry in accordance with F.S. Rule 64ER20-39.											



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Filth/Foreign Material
PASSED

Analyte	LOD	Units	Result	P/F	Action Level
Filth and Foreign Material	1	%	ND	PASS	5

Analyzed by: 3404, 2821, 1541	Weight: 12.6g	Extraction date: 07/19/22 13:12:24	Extracted by: 2821
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Analysis Method : SOP.T.30.074, SOP.T.40.074

Analytical Batch : GA047088FIL

Reviewed On : 07/19/22 15:53:05

Instrument Used : GA-Filth/Foreign Material Microscope

Batch Date : 07/19/22 13:11:33

Running on : N/A

Dilution : N/A

Reagent : N/A

Consumables : N/A

Pipette : N/A

Filth and foreign material inspection is performed by visual inspection utilizing naked eye and microscope technologies in accordance with F.S. Rule 64ER20-39.


Water Activity
PASSED

Analyte	LOD	Units	Result	P/F	Action Level
Water Activity	0.1	aw	0.639	PASS	0.85

Analyzed by: 3404, 3655, 2507	Weight: 0.5649g	Extraction date: 07/20/22 10:01:37	Extracted by: 3655
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Analysis Method : SOP.T.40.019

Analytical Batch : GA047095WAT

Reviewed On : 07/20/22 12:21:41

Instrument Used : GA-085 Rotronic HygroPalm

Batch Date : 07/19/22 13:48:02

Running on : N/A

Dilution : N/A

Reagent : N/A

Consumables : 107264

Pipette : N/A

Water Activity is performed using a Rotronic HygroPalm HP 23-AW in accordance with F.S. Rule 64ER20-39.