

Hemp Forte

Sample ID: SA-220509-9125
 Batch: 220502
 Type: In-Process Materials
 Matrix: Oil / Liquid - Hemp Seed Oil
 Unit Mass (g):

Received: 05/09/2022
 Completed: 05/20/2022

Client
 Permahlil Extracts
 427 Hume Bedford Pike
 Paris, KY 40361
 USA
 Lic. #: P_0413



Summary

Test	Date Tested	Status
Cannabinoids	05/20/2022	Tested
Foreign Matter	05/09/2022	Tested
Heavy Metals	05/12/2022	Tested
Microbials	05/17/2022	Tested
Mycotoxins	05/19/2022	Tested
Pesticides	05/19/2022	Tested
Residual Solvents	05/19/2022	Tested
Terpenes	05/19/2022	Tested

ND Total Δ9-THC	34.1 mg/mL CBD	39.3 mg/mL Total Cannabinoids	Not Tested Moisture Content	Not Detected Foreign Matter	Yes Internal Standard Normalization
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Cannabinoids by HPLC-PDA, LC-MS/MS, and/or GC-MS/MS

Analyte	LOD (mg/mL)	LOQ (mg/mL)	Result (mg/mL)	Result (%)	Result (mg/unit)
CBC	0.00095	0.00284	1.60	0.175	95.9
CBCA	0.00181	0.00543	ND	ND	ND
CBCV	0.0006	0.0018	0.0210	0.00230	1.26
CBD	0.00081	0.00242	34.1	3.73	2040
CBDA	0.00043	0.0013	ND	ND	ND
CBDV	0.00061	0.00182	0.479	0.0524	28.7
CBDVA	0.00021	0.00063	ND	ND	ND
CBG	0.00057	0.00172	0.871	0.0954	52.3
CBGA	0.00049	0.00147	ND	ND	ND
CBL	0.00112	0.00335	0.108	0.0118	6.48
CBLA	0.00124	0.00371	ND	ND	ND
CBN	0.00056	0.00169	0.550	0.0602	33.0
CBNA	0.0006	0.00181	ND	ND	ND
CBT	0.0018	0.0054	1.56	0.171	93.7
Δ8-THC	0.00104	0.00312	ND	ND	ND
Δ9-THC	0.00076	0.00227	ND	ND	ND
Δ9-THCA	0.00084	0.00251	ND	ND	ND
Δ9-THCV	0.00069	0.00206	ND	ND	ND
Δ9-THCVA	0.00062	0.00186	ND	ND	ND
Total Δ9-THC			ND	ND	ND
Total CBD			34.1	3.73	2040
Total			39.3	4.30	2360

ND = Not Detected; NT = Not Tested; LOD = Limit of Detection; LOQ = Limit of Quantitation; RL = Reporting Limit; Δ = Delta; Total Δ9-THC = Δ9-THCA * 0.877 + Δ9-THC; Total CBD = CBDA * 0.877 + CBD;



Generated By: Christopher Ware
 CEO
 Date: 06/02/2022



Tested By: Jared Burkhart
 Technical Manager
 Date: 05/20/2022



ISO/IEC 17025:2017 Accredited
 Accreditation #108651



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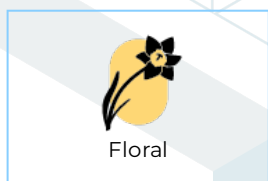
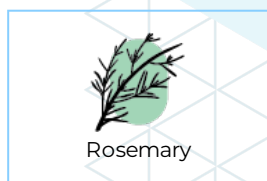
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Terpenes by HS-GC-MS/MS

Analyte	LOD (%)	LOQ (%)	Result (%)	Analyte	LOD (%)	LOQ (%)	Result (%)
α-Bisabolol	0.00001	0.00005	ND	Limonene	0.00001	0.00005	0.000106
(+)-Borneol	0.00001	0.00005	ND	Linalool	0.00001	0.00005	0.004664
Camphene	0.00001	0.00005	ND	β-myrcene	0.00001	0.00005	0.002014
Camphor	0.00001	0.00005	ND	Nerol	0.00001	0.00005	ND
3-Carene	0.00001	0.00005	ND	cis-Nerolidol	0.00001	0.00005	ND
β-Caryophyllene	0.00001	0.00005	0.001607	trans-Nerolidol	0.00001	0.00005	ND
Caryophyllene Oxide	0.00001	0.00005	ND	Ocimene	0.00001	0.00005	ND
α-Cedrene	0.00001	0.00005	ND	α-Phellandrene	0.00001	0.00005	0.000053
Cedrol	0.00001	0.00005	ND	α-Pinene	0.00001	0.00005	0.006794
Eucalyptol	0.00001	0.00005	0.002298	β-Pinene	0.00001	0.00005	0.00146
Fenchone	0.00001	0.00005	ND	Pulegone	0.00001	0.00005	0.001822
Fenchyl Alcohol	0.00001	0.00005	ND	Sabinene	0.00001	0.00005	ND
Geraniol	0.00001	0.00005	ND	Sabinene Hydrate	0.00001	0.00005	ND
Geranyl Acetate	0.00001	0.00005	ND	α-Terpinene	0.00001	0.00005	ND
Guaiol	0.00001	0.00005	ND	γ-Terpinene	0.00001	0.00005	ND
Hexahydrothymol	0.00001	0.00005	ND	α-Terpineol	0.00001	0.00005	0.00112
α-Humulene	0.00001	0.00005	0.000656	γ-Terpineol	0.00001	0.00005	ND
Isoborneol	0.00001	0.00005	ND	Terpinolene	0.00001	0.00005	ND
Isopulegol	0.00001	0.00005	ND	Total Terpenes (%)			0.0226

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 CEO
 Date: 06/02/2022



Tested By: Scott Caudill
 Senior Scientist
 Date: 05/19/2022



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Heavy Metals by ICP-MS

Analyte	LOD (ppb)	LOQ (ppb)	Result (ppb)
Arsenic	2	20	ND
Cadmium	1	20	ND
Lead	2	20	ND
Mercury	12	50	ND

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Generated By: Christopher Ware
 CEO
 Date: 06/02/2022



Tested By: Nicholas Howard
 Scientist
 Date: 05/12/2022



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Pesticides by LC-MS/MS and GC-MS/MS

Analyte	LOD (ppb)	LOQ (ppb)	Result (ppb)	Analyte	LOD (ppb)	LOQ (ppb)	Result (ppb)
Acephate	30	100	ND	Hexythiazox	30	100	ND
Acetamiprid	30	100	ND	Imazalil	30	100	ND
Aldicarb	30	100	ND	Imidacloprid	30	100	ND
Azoxystrobin	30	100	ND	Kresoxim methyl	30	100	ND
Bifenazate	30	100	ND	Malathion	30	100	ND
Boscalid	30	100	ND	Metalaxyl	30	100	ND
Carbaryl	30	100	ND	Methiocarb	30	100	ND
Carbofuran	30	100	ND	Methomyl	30	100	ND
Chloranthraniliprole	30	100	ND	Mevinphos	30	100	ND
Chlorfenapyr	30	100	ND	Myclobutanil	30	100	ND
Clofentezine	30	100	ND	Naled	30	100	ND
Coumaphos	30	100	ND	Oxamyl	30	100	ND
Cypermethrin	30	100	ND	Paclobutrazol	30	100	ND
Daminozide	30	100	ND	Phosmet	30	100	ND
Diazinon	30	100	ND	Piperonyl Butoxide	30	100	ND
Dichlorvos	30	100	ND	Prallethrin	30	100	ND
Dimethoate	30	100	ND	Propiconazole	30	100	ND
Dimethomorph	30	100	ND	Propoxur	30	100	ND
Ethoprophos	30	100	ND	Pyridaben	30	100	ND
Etoxazole	30	100	ND	Spinetoram	30	100	ND
Fenhexamid	30	100	ND	Spinosad	30	100	ND
Fenoxycarb	30	100	ND	Spiromesifen	30	100	ND
Fenpyroximate	30	100	ND	Spirotetramat	30	100	ND
Fipronil	30	100	ND	Spiroxamine	30	100	ND
Flonicamid	30	100	ND	Tebuconazole	30	100	ND
Fludioxonil	30	100	ND	Thiacloprid	30	100	ND
				Thiamethoxam	30	100	ND
				Trifloxystrobin	30	100	ND

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Generated By: Christopher Ware
 CEO
 Date: 06/02/2022



Tested By: Jared Burkhart
 Technical Manager
 Date: 05/19/2022



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Mycotoxins by LC-MS/MS

Analyte	LOD (ppb)	LOQ (ppb)	Result (ppb)
B1	1	5	ND
B2	1	5	ND
G1	1	5	ND
G2	1	5	ND
Ochratoxin A	1	5	ND

ND = Not Detected; NT = Not Tested; LOD = Limit of Detection; LOQ = Limit of Quantitation; P = Pass; F = Fail; RL = Reporting Limit



Generated By: Christopher Ware
 CEO
 Date: 06/02/2022



Tested By: Jared Burkhart
 Technical Manager
 Date: 05/19/2022



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Microbials by PCR and Plating

Analyte	LOD (CFU/g)	Result (CFU/g)	Result (Qualitative)
Coliforms	1	ND	
Aerobic Bacteria	1	ND	
Salmonella			Not Detected per 1 gram
Total Enterobacteriaceae			Not Detected per 1 gram

ND = Not Detected; NT = Not Tested; LOD = Limit of Detection; LOQ = Limit of Quantitation; CFU = Colony Forming Units; P = Pass; F = Fail; RL = Reporting Limit



Generated By: Christopher Ware
 CEO
 Date: 06/02/2022



Tested By: Alex Morris
 Quality Assurance Manager
 Date: 05/17/2022



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Residual Solvents by HS-GC-MS/MS

Analyte	LOD (ppm)	LOQ (ppm)	Result (ppm)	Analyte	LOD (ppm)	LOQ (ppm)	Result (ppm)
Acetone	167	500	ND	Ethylene Glycol	21	62	ND
Acetonitrile	14	41	ND	Ethylene Oxide	0.5	1	ND
Benzene	0.5	1	ND	Heptane	167	500	ND
Butane	167	500	ND	n-Hexane	10	29	ND
1-Butanol	167	500	ND	Isobutane	167	500	ND
2-Butanol	167	500	ND	Isopropyl Acetate	167	500	ND
2-Butanone	167	500	ND	Isopropyl Alcohol	167	500	ND
Chloroform	2	6	ND	Isopropylbenzene	167	500	ND
Cyclohexane	129	388	ND	Methanol	100	300	ND
1,2-Dichloroethane	0.5	1	ND	2-Methylbutane	10	29	ND
1,2-Dimethoxyethane	4	10	ND	Methylene Chloride	20	60	ND
Dimethyl Sulfoxide	167	500	ND	2-Methylpentane	10	29	ND
N,N-Dimethylacetamide	37	109	ND	3-Methylpentane	10	29	ND
2,2-Dimethylbutane	10	29	ND	n-Pentane	167	500	ND
2,3-Dimethylbutane	10	29	ND	1-Pentanol	167	500	ND
N,N-Dimethylformamide	30	88	ND	n-Propane	167	500	ND
2,2-Dimethylpropane	167	500	ND	1-Propanol	167	500	ND
1,4-Dioxane	13	38	ND	Pyridine	7	20	ND
Ethanol	167	500	ND	Tetrahydrofuran	24	72	ND
2-Ethoxyethanol	6	16	ND	Toluene	30	89	ND
Ethyl Acetate	167	500	ND	Trichloroethylene	3	8	ND
Ethyl Ether	167	500	ND	Tetramethylene Sulfone	6	16	ND
Ethylbenzene	3	7	ND	Xylenes (o-, m-, and p-)	73	217	ND

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Reporting Limit Appendix

Heavy Metals - Colorado CDPHE

Analyte	Limit (ppb)	Analyte	Limit (ppb)
Arsenic	1500	Lead	500
Cadmium	500	Mercury	1500

Microbials - Colorado CDPHE

Analyte	Limit (CFU/g)	Analyte	Limit (CFU/g)
Coliforms	100	Aerobic Bacteria	10000

Residual Solvents - USP 467

Analyte	Limit (ppm)	Analyte	Limit (ppm)
Acetone	5000	Ethylene Glycol	620
Acetonitrile	410	Ethylene Oxide	1
Benzene	2	Heptane	5000
Butane	5000	n-Hexane	290
1-Butanol	5000	Isobutane	5000
2-Butanol	5000	Isopropyl Acetate	5000
2-Butanone	5000	Isopropyl Alcohol	5000
Chloroform	60	Isopropylbenzene	5000
Cyclohexane	3880	Methanol	3000
1,2-Dichloroethane	5	2-Methylbutane	290
1,2-Dimethoxyethane	100	Methylene Chloride	600
Dimethyl Sulfoxide	5000	2-Methylpentane	290
N,N-Dimethylacetamide	1090	3-Methylpentane	290
2,2-Dimethylbutane	290	n-Pentane	5000
2,3-Dimethylbutane	290	1-Pentanol	5000
N,N-Dimethylformamide	880	n-Propane	5000
2,2-Dimethylpropane	5000	1-Propanol	5000
1,4-Dioxane	380	Pyridine	200
Ethanol	5000	Tetrahydrofuran	720
2-Ethoxyethanol	160	Toluene	890
Ethyl Acetate	5000	Trichloroethylene	80
Ethyl Ether	5000	Tetramethylene Sulfone	160
Ethylbenzene	70	Xylenes (o-, m-, and p-)	2170

Pesticides - CA DCC

Analyte	Limit (ppb)	Analyte	Limit (ppb)
Aldicarb	30	Imidacloprid	3000
Azoxystrobin	40000	Kresoxim methyl	1000
Bifenazate	5000	Malathion	5000
Boscalid	10000	Metaxyl	15000
Carbaryl	500	Methiocarb	30
Carbofuran	30	Methomyl	100
Chloranthraniliprole	40000	Mevinphos	30
Chlorfenapyr	30	Myclobutanil	9000
Clofentezine	500	Naled	500
Coumaphos	30	Oxamyl	200
Cypermethrin	1000	Paclobotrazol	30
Daminozide	30	Phosmet	200
Diazinon	200	Piperonyl Butoxide	8000
Dichlorvos	30	Prallethrin	400
Dimethoate	30	Propiconazole	20000
Dimethomorph	20000	Propoxur	30
Ethoprophos	30	Pyridaben	3000
Etoazole	1500	Spinetoram	3000
Fenhexamid	10000	Spinosad	3000
Fenoxycarb	30	Spiromesifen	12000
Fenpyroximate	2000	Spirotetramat	13000
Fipronil	30	Spiroxamine	30
Fonicamid	2000	Tebuconazole	2000
Fludioxonil	30000	Thiacloprid	30

Mycotoxins - Colorado CDPHE

Analyte	Limit (ppm)	Analyte	Limit (ppm)
B1	5	B2	5
G1	5	G2	5
Ochratoxin A	5		

Pesticides - CA DCC

Analyte	Limit (ppb)	Analyte	Limit (ppb)
Acephate	5000	Hexythiazox	2000
Acetamidprid	5000	Imazail	30

