KCA Laboratories
232 North Plaza Drive
Nicholasville, KY 40356

+1-833-KCA-LABS
https://kcalabs.com
KDA Lic.# P_0058

Certificate of Analysis

HHC

Sample ID: SA-241104-51426
Batch: ALH630
Type: In-Process Material
Matrix: Concentrate - Distillate
Unit Mass (g):

Received: 11/05/2024
Completed: 11/20/2024

Summary

Test	Date Tested	Status
Cannabinoids	11/20/2024	Tested
Catalyst Metals	11/08/2024	Tested
Heavy Metals	11/07/2024	Passed
Microbials	11/07/2024	Passed
Mycotoxins	11/08/2024	Passed
Pesticides	11/08/2024	Passed
Residual Solvents	11/08/2024	Passed

ND	53.8 %	96.9 %	Not Tested	Not Tested	Yes
Total Δ9-THC	(6aR,9S,10aR)-HHC	Total Cannabinoids	Moisture Content	Foreign Matter	Internal Standard Normalization

Cannabinoids by GC-MS/MS

Analyte	LOD (%)	LOQ (%)	Result (%)	Result (mg/g)
CBC	0.0095	0.0284	ND	ND
CBD	0.0081	0.0242	ND	ND
CBDV	0.0061	0.0182	ND	ND
CBG	0.0057	0.0172	ND	ND
CBN	0.0056	0.0169	0.0912	0.912
CBT	0.018	0.054	ND	ND
Δ4,8-iso-THC	0.0067	0.02	ND	ND
Δ8-iso-THC	0.0067	0.02	ND	ND
Δ8-THC	0.0104	0.0312	0.129	1.29
Δ8-THCV	0.0067	0.02	ND	ND
Δ9-THC	0.0076	0.0227	ND	ND
Δ9-THCV	0.0069	0.0206	ND	ND
exo-THC	0.0067	0.02	ND	ND
(6aR,9R,10aR)-HHC	0.0067	0.02	42.8	428
(6aR,9S,10aR)-HHC	0.0067	0.02	53.8	538
Total Δ9-THC			**ND**	**ND**
Total			**96.9**	**969**

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: Ryan Bellone
CCO
Date: 11/20/2024

Tested By: Scott Caudill
Laboratory Manager
Date: 11/20/2024

ISO/IEC 17025:2017 Accredited
Accreditation #108651

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Heavy Metals by ICP-MS

Analyte	LOD (ppm)	LOQ (ppm)	Result (ppm)	P/F
Arsenic	0.002	0.02	ND	P
Cadmium	0.001	0.02	ND	P
Lead	0.002	0.02	<LOQ	P
Mercury	0.012	0.05	ND	P

ND = Not Detected; NT = Not Tested; LOD = Limit of Detection; LOQ = Limit of Quantitation; P = Pass; F = Fail; RL = Reporting Limit; Values over action limits may be estimates

Generated By: Ryan Bellone
CCO
Date: 11/20/2024

Tested By: Chris Farman
Scientist
Date: 11/07/2024

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Pesticides by LC-MS/MS

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

ND = Not Detected; NT = Not Tested; LOD = Limit of Detection; LOQ = Limit of Quantitation; P = Pass; F = Fail; RL = Reporting Limit; Values over action limits may be estimates

Generated By: Ryan Bellone
CCO
Date: 11/20/2024

Tested By: Jasper van Heemst
Principal Scientist
Date: 11/08/2024

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Mycotoxins by LC-MS/MS

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

ND = Not Detected; NT = Not Tested; LOD = Limit of Detection; LOQ = Limit of Quantitation; P = Pass; F = Fail; RL = Reporting Limit; Values over action limits may be estimates

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CCO
Date: 11/20/2024

Tested By: Jasper van Heemst
Principal Scientist
Date: 11/08/2024

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Microbials by PCR and Plating

Analyte	LOD (CFU/g)	Result (CFU/g)	Result (Qualitative)	P/F
Total aerobic count	10	ND		P
Total coliforms	10	ND		P
Generic E. coli	10	ND		P
Salmonella spp.	1		Not Detected per 1 gram	P
Shiga-toxin producing E. coli (STEC)	1		Not Detected per 1 gram	P

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: Ryan Bellone
CCO
Date: 11/20/2024

Tested By: Christina Neace
Laboratory Technician
Date: 11/07/2024

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Residual Solvents by HS-GC-MS

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

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Generated By: Ryan Bellone
CCO
Date: 11/20/2024

Tested By: Kelsey Rogers
Scientist
Date: 11/08/2024

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Catalyst Metals

Analyte	Result	Unit	LOD	LOQ
Platinum (Pt)	ND	ppm	0.003	0.01
Rhodium (Rh)	ND	ppm	0.003	0.01
Ruthenium (Ru)	ND	ppm	0.003	0.01
Nickel (Ni)	ND	ppm	0.0167	0.05
Palladium (Pd)	ND	ppm	0.003	0.01

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Tested By: Chris Farman
Scientist
Date: 11/08/2024

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Reporting Limit Appendix

Heavy Metals - KY 902 KAR 45:190

Analyte	Limit (ppm)	Analyte	Limit (ppm)
Arsenic	1.5	Lead	0.5
Cadmium	0.5	Mercury	1.5

Microbials -

Analyte	Limit (CFU/g)	Analyte	Limit (CFU/g)
Total coliforms	100	Total aerobic count	10000

Residual Solvents - USP 467

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

Pesticides - CA DCC

Analyte	Limit (ppb)	Analyte	Limit (ppb)
Abamectin	300	Hexythiazox	2000
Acephate	5000	Imazalil	30

Pesticides - CA DCC

Analyte	Limit (ppb)	Analyte	Limit (ppb)
Acequinocyl	4000	Imidacloprid	3000
Acetamiprid	5000	Kresoxim methyl	1000
Aldicarb	30	Malathion	5000
Azoxystrobin	40000	Metalaxyl	15000
Bifenazate	5000	Methiocarb	30
Bifenthrin	500	Methomyl	100
Boscalid	10000	Mevinphos	30
Carbaryl	500	Myclobutanil	9000
Carbofuran	30	Naled	500
Chloranthraniliprole	40000	Oxamyl	200
Chlorfenapyr	30	Paclobutrazol	30
Chlorpyrifos	30	Permethrin	20000
Clofentezine	500	Phosmet	200
Coumaphos	30	Piperonyl Butoxide	8000
Cypermethrin	1000	Prallethrin	400
Diazinon	200	Propiconazole	20000
Dichlorvos	30	Propoxur	30
Dimethoate	30	Pyrethrins	1000
Dimethomorph	20000	Pyridaben	3000
Ethoprophos	30	Spinetoram	3000
Etofenprox	30	Spinosad	3000
Etoxazole	1500	Spiromesifen	12000
Fenhexamid	10000	Spirotetramat	13000
Fenoxycarb	30	Spiroxamine	30
Fenpyroximate	2000	Tebuconazole	2000
Fipronil	30	Thiacloprid	30
Flonicamid	2000	Thiamethoxam	4500
Fludioxonil	30000	Trifloxystrobin	30000

Mycotoxins - Colorado CDPHE

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

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