





# Certificate of Analysis

**PASSED**

19000 SW 192 STREET  
MIAMI, FL, 33187, US  
Telephone: 7865860672  
Email: erick.ramirez@curaleaf.com

Sample : DA91007011-004  
Harvest/LOT ID: HS-TOH1004201901  
Batch# : HS-TOH1004201901  
Sampled : 10/07/19  
Ordered : 10/07/19

Sample Size Received : 8.0 gram  
Total Weight/Volume : 2000 gram  
Completed : 10/11/19 Expires: 10/11/20  
Sample Method : SOP Client Method

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## Terpenes

**TESTED**

Terpenes	LOD(%)	mg/g	%	Result (%)	Terpenes	LOD(%)	mg/g	%	Result (%)
ALPHA-CEDRENE	0.007	ND	ND		SABINENE	0.007	ND	ND	
ALPHA-HUMULENE	0.007	ND	ND		SABINENE HYDRATE	0.007	ND	ND	
ALPHA-PINENE	0.007	ND	ND		TERPINEOL	0.007	ND	ND	
ALPHA-TERPINENE	0.007	ND	ND		TERPINOLENE	0.007	ND	ND	
BETA-MYRCENE	0.007	ND	ND		TRANS-CARYOPHYLLENE	0.007	ND	ND	
BETA-PINENE	0.007	ND	ND		TRANS-NEROLIDOL	0.007	ND	ND	
BORNEOL	0.013	ND	ND		VALENCENE	0.007	ND	ND	
CAMPHENE	0.007	ND	ND						
CAMPHOR	0.013	ND	ND						
CARYOPHYLLENE OXIDE	0.007	ND	ND						
CEDROL	0.007	ND	ND						
ALPHA-BISABOLOL	0.007	ND	ND						
ISOPULEGOL	0.007	ND	ND						
CIS-NEROLIDOL	0.007	ND	ND						
3-CARENE	0.007	ND	ND						
FENCHYL ALCOHOL	0.007	ND	ND						
HEXAHYDROTHYMOL	0.007	ND	ND						
EUCALYPTOL	0.007	ND	ND						
ISOBORNEOL	0.007	ND	ND						
FARNESENE	0.007	ND	ND						
FENCHONE	0.007	ND	ND						
GAMMA-TERPINENE	0.007	ND	ND						
GERANIOL	0.007	ND	ND						
GERANYL ACETATE	0.007	ND	ND						
GUAJOL	0.007	ND	ND						
LIMONENE	0.007	ND	ND						
LINALOOL	0.007	ND	ND						
NEROL	0.007	ND	ND						
OCIMENE	0.007	ND	ND						
ALPHA-PHELLANDRENE	0.007	ND	ND						
PULEGONE	0.007	ND	ND						
<b>Total (%)</b>		0.000							



## Terpenes

**TESTED**

Analyzed by 585 Weight 1.0023g Extraction date 10/07/19 02:10:01 Extracted By 585

Analysis Method -SOP.T.40.090  
Analytical Batch -DA006915  
Instrument Used :  
Running On :  
Batch Date :

Reagent	Dilution	Consums. ID
100719.R09	10	180711
100219.R01		SFN-BX-1025
		923C4-923AK
		910C6 - 910H

Terpenoid profile screening is performed using GC-MS with Liquid Injection (Gas Chromatography - Mass Spectrometer) which can screen 38 terpenes using Method SOP.T.40.091 Terpenoid Analysis Via GC/MS.

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**Jorge Segredo**  
Lab Director



10/11/19

State License # CMTL-0002  
ISO Accreditation # ISO/IEC  
17025:2017 Accreditation  
PJLA-Testing 97164

Signature

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Sample Method : SOP Client Method

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## Pesticides

**PASSED**

Pesticides	LOD	Units	Action Level	Result	Pesticides	LOD	Units	Action Level	Result
DIMETHOATE	0.01	ppm	0.1	ND	PIPERONYL BUTOXIDE	0.01	ppm	3	ND
ABAMECTIN B1A	0.02	ppm	0.3	ND	PRALLETHRIN	0.05	ppm	0.4	ND
CIS-PERMETHRIN	0.05	ppm	1	ND	PROPOXUR	0.01	ppm	0.1	ND
SPINETORAM	0.01	PPM		ND	PYRETHRIN I	0.01	ppm	1	ND
ACEPHATE	0.001	ppm	3	ND	PYRIDABEN	0.01	ppm	3	ND
DIMETHOMORPH	0.005	ppm	3	ND	SPINOSAD (SPINOSYN A)	0.01	ppm	3	ND
ETHOPROPHOS	0.01	ppm	0.1	ND	SPINOSAD (SPINOSYN D)	0.01	ppm	3	ND
ACEQUINOCYL	0.01	ppm	2	ND	SPIROMESIFEN	0.01	ppm	3	ND
ACETAMIPRID	0.01	ppm	3	ND	SPIROTETRAMAT	0.02	ppm	3	ND
ETOFENPROX	0.01	ppm	0.1	ND	SPIROXAMINE	0.01	ppm	0.1	ND
ALDICARB	0.02	ppm	0.1	ND	TEBUCONAZOLE	0.01	ppm	1	ND
ETOXAZOLE	0.01	ppm	1.5	ND	THIACLOPRID	0.01	ppm	0.1	ND
AZOXYSTROBIN	0.01	ppm	3	ND	THIAMETHOXAM	0.01	ppm	1	ND
FENHEXAMID	0.01	ppm	3	ND	TRIFLOXYSTROBIN	0.01	ppm	3	ND
BIFENAZATE	0.01	ppm	3	ND					
FENOXYCARB	0.01	ppm	0.1	ND					
FENPYROXIMATE	0.01	ppm	2	ND					
BIFENTHRIN	0.01	ppm	0.5	ND					
CARBARYL	0.01	ppm	0.5	ND					
FIPRONIL	0.02	ppm	0.1	ND					
FLONICAMID	0.01	ppm	2	ND					
CARBOFURAN	0.01	ppm	0.1	ND					
CHLORANTRANILIPROLE	0.01	ppm	3	ND					
FLUDIOXONIL	0.01	ppm	3	ND					
HEXYTHIAZOX	0.01	ppm	2	ND					
IMAZALIL	0.01	ppm	0.1	ND					
CHLORPYRIFOS	0.01	ppm	0.1	ND					
IMIDACLOPRID	0.01	ppm	3	ND					
CLOFENTEZINE	0.01	ppm	0.5	ND					
KRESOXIM-METHYL	0.01	ppm	1	ND					
COUMAPHOS	0.005	ppm	0.1	ND					
MALATHION	0.01	ppm	2	ND					
CYPERMETHRIN	0.01	ppm	1	ND					
DAMINOZIDE	0.01	ppm	0.1	ND					
METALAXYL	0.01	ppm	3	ND					
DICHLORVOS	0.05	ppm	0.1	ND					
METHIOCARB	0.01	ppm	0.1	ND					
METHOMYL	0.01	ppm	0.1	ND					
DIAZANON	0.01	ppm	0.2	ND					
MEVINPHOS	0.01	ppm	0.1	ND					
MYCLOBUTANIL	0.01	ppm	3	ND					
NALED	0.01	ppm	0.5	ND					
OXAMYL	0.01	ppm	0.5	ND					
PACLOBUTRAZOL	0.01	ppm	0.1	ND					
TRANS-PERMETHRIN	0.05	ppm	1	ND					
PHOSMET	0.01	ppm	0.2	ND					



### Pesticides

PASSED

Analyzed by <b>56</b>	Weight 1.0183g	Extraction date 10/07/19 06:10:01	Extracted By 357
Analysis Method : SOP.T.30.065, SOP.T.40.065, SOP.T.40.066, SOP.T.40.070 , SOP.T.30.065, SOP.T.40.070			
Analytical Batch : DA006935			
Instrument Used :			
Running On :			
Batch Date :			

Reagent	Dilution	Consums. ID
	10	181205

Pesticide screen is performed using LC-MS and/or GC-MS which can screen down to below single digit ppb concentrations for regulated Pesticides. Currently we analyze for 67 Pesticides. (Method: SOP.T.30.060 Sample Preparation for Pesticides Analysis via LCMSMS and GCMSMS. SOP.T40.065/SOP.T.40.066/SOP.T.40.070 Procedure for Pesticide Quantification Using LCMS and GCMS). \* Volatile Pesticide screening is performed using GC-MS which can screen down to below single digit ppb concentrations for regulated Pesticides. Analytes marked with an asterisk were tested using GC-MS.

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**Jorge Segredo**  
Lab Director

State License # CMTL-0002  
ISO Accreditation # ISO/IEC  
17025:2017 Accreditation  
PJLA-Testing 97164



Signature

10/11/19

Signed On



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Batch# : HS-TOH1004201901  
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Completed : 10/11/19 Expires: 10/11/20  
Sample Method : SOP Client Method

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Residual Solvents
PASSED


Residual Solvents
PASSED

Solvent	LOD	Units	Action Level (PPM)	Pass/Fail	Result
1,2-DICHLOROETHANE	0.2	ppm	2	PASS	ND
1,1-DICHLOROETHENE	0.2	ppm	8	PASS	ND
2-ETHOXYETHANOL	9.6	ppm		PASS	ND
2-PROPANOL	140	ppm	500	PASS	ND
ACETONE	140	ppm	750	PASS	ND
ACETONITRILE	6	ppm	60	PASS	ND
BENZENE	0.1	ppm	1	PASS	ND
BUTANES (ISO-BUTANE)	50	ppm	2000	PASS	ND
BUTANES (N-BUTANE)	50	ppm	2000	PASS	ND
CHLOROFORM	0.2	ppm	2	PASS	ND
ETHANOL	140	ppm	5000	PASS	ND
ETHYL ACETATE	140	ppm	400	PASS	ND
CYCLOHEXANE	232.8	ppm		PASS	ND
DICHLOROMETHANE	36	ppm		PASS	ND
ETHYL ETHER	140	ppm	500	PASS	ND
ETHYLENE OXIDE	0.5	ppm	5	PASS	ND
ETHYLBENZENE	130.2	ppm		PASS	ND
HEPTANE	140	ppm	500	PASS	ND
HEXANES (2,2-DIMETHYLBUTANE)	17.4	ppm	60	PASS	ND
HEXANES (2,3-DIMETHYLBUTANE)	17.4	ppm	60	PASS	ND
HEXANES (2-METHYLPENTANE)	17.4	ppm	60	PASS	ND
HEXANES (3-METHYLPENTANE)	17.4	ppm	60	PASS	ND
ISOPROPYL ACETATE	140	ppm		PASS	ND
METHYLENE CHLORIDE	1	ppm	125	PASS	ND
METHANOL	25	ppm	250	PASS	ND
N-HEXANE	17.4	ppm	60	PASS	ND
PENTANES (ISO-PENTANE)	140	ppm		PASS	ND
PENTANES (N-PENTANE)	50	ppm	750	PASS	ND
PENTANES (NEO-PENTANE)	50	ppm		PASS	ND
PROPANE	10	ppm	2100	PASS	ND
TETRAHYDROFURAN	43.2	ppm		PASS	ND
TOLUENE	15	ppm	150	PASS	ND
TOTAL XYLENES	1	ppm	150	PASS	ND
TRICHLOROETHYLENE	0.2	ppm	25	PASS	ND

Analyzed by: 850  
Weight: 0.0206g  
Extraction date: 10/07/19 02:10:10  
Extracted By: 850  
Analysis Method -SOP.T.40.032  
Analytical Batch -DA006923  
Instrument Used :  
Running On :  
Batch Date :

Reagent	Dilution	Consums. ID
	1	00268767 160861-1 24151941

Residual solvents screening is performed using GC-MS which can detect below single digit ppm concentrations. Currently we analyze for 21 Residual solvents.(Method: SOP.T.40.032 Residual Solvents Analysis via GC-MS).

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Jorge Segredo  
Lab Director



10/11/19

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Sample Method : SOP Client Method

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**Microbials**

PASSED



**Mycotoxins**

PASSED

Analyte	LOD	Result	Action Level (cfu/g)
ASPERGILLUS_TERREUS		not present in 1 gram.	
ASPERGILLUS_NIGER		not present in 1 gram.	
ASPERGILLUS_FUMIGATUS		not present in 1 gram.	
ASPERGILLUS_FLAVUS		not present in 1 gram.	
SALMONELLA_SPECIFIC_GENE		not present in 1 gram.	
ESCHERICHIA_COLI_SHIGELLA_SPP		not present in 1 gram.	

Analysis Method -SOP.T.40.043 / SOP.T.40.044 / SOP.T.40.041  
Analytical Batch -DA006929 Batch Date :  
Instrument Used :  
Running On :

Analyzed by	Weight	Extraction date	Extracted By
513	1.0468g	10/07/19	513

**Consums. ID**

- A01
- 2803018
- 013
- 009A
- 019
- 009

Microbiological testing for Fungal and Bacterial Identification via Polymerase Chain Reaction (PCR) method consisting of sample DNA amplified via tandem Polymerase Chain Reaction (PCR) as a crude lysate which avoids purification. (Method SOP.T.40.043) If a pathogenic Escherichia Coli, Salmonella, Aspergillus fumigatus, Aspergillus flavus, Aspergillus niger, or Aspergillus terreus is detected in 1g of a sample, the sample fails the microbiological-impurity testing. Pour-plating is used for quantitation and confirmation. Total Yeast and Mold has an action limit of 100,000 CFU.

Analyte	LOD	Units	Result	Action Level (PPM)
AFLATOXIN G2	0.001	ppm	ND	0.02
AFLATOXIN G1	0.001	ppm	ND	0.02
AFLATOXIN B2	0.001	ppm	ND	0.02
AFLATOXIN B1	0.001	ppm	ND	0.02
OCHRATOXIN A+	0.001	ppm	ND	0.02

Analysis Method -SOP.T.30.065, SOP.T.40.065  
Analytical Batch -DA006936  
Instrument Used :  
Running On :  
Batch Date :

Analyzed by	Weight	Extraction date	Extracted By
56	1g	NA	NA

Aflatoxins B1, B2, G1, G2, and Ochratoxins A testing using LC-MS. (Method: SOP.T.30.065 for Sample Preparation and SOP.T.40.065 Procedure for Mycotoxins Quantification Using LCMS. LOQ 1.0 ppb). Aflatoxin B1, B2, G1, and G2 must individually be <20ug/Kg. Ochratoxins must be <20ug/Kg.



**Heavy Metals**

PASSED

Dilution  
50

Metal	LOD	Unit	Result	Action Level (PPM)
ARSENIC	0.0008369	ppm	ND	1.5
CADMIUM	0.0022201	ppm	ND	0.5
LEAD	0.0032903	ppm	ND	0.5
MERCURY	0.0028556	ppm	ND	3

Analyzed by	Weight	Extraction date	Extracted By
457	0.5057g	10/07/19 03:10:06	457

Analysis Method -SOP.T.40.050, SOP.T.30.052  
Analytical Batch -DA006922  
Instrument Used :  
Running On :  
Batch Date :

Heavy Metals screening is performed using ICP-MS (Inductively Coupled Plasma - Mass Spectrometer) which can screen down to below single digit ppb concentrations for regulated heavy metals using Method SOP.T.30.052 Sample Preparation for Heavy Metals Analysis via ICP-MS and SOP.T.40.050 Heavy Metals Analysis via ICP-MS.

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