

CERTIFICATE OF ANALYSIS

Order Type: Industrial Hemp
Order ID: OR2019-2845

Customer ID: 788
Customer Name: George Friedrich

Harvest/Extract Lot: None
Harvest/Extract Batch: None

Cultivar (Strain): Sweetened
Sample Date: 08/06/2019

Lab ID: SA2019-9181
Date Received: 08/06/2019

Sample Matrix: Industrial Hemp
Date Completed: 08/16/2019

Remarks:

MICROBIOLOGICAL PROFILE

Analysis Date/Time: 08/14/2019 1946
Analyst: OL

Method: Hardy Diagnostics CompactDry
Instrument:

Deviations from SOP:
None

| <u>Bacteria/Microbe</u> | <u>Result (CFU/g)</u> | <u>Action Level (CFU/g)</u> |
|----------------------------|-----------------------|-----------------------------|
| Aerobic Plate Count, Total | NT | 100 |
| Coliforms, Total | Absent | 100 |
| Escherichia Coli (E. Coli) | Absent | 1 |
| Mold | Absent | 10000 |
| Yeast | Absent | 10000 |
| Salmonella spp. | Absent | 1 |



Abbreviations: EC - Escherichia Coli, CFU - Colony-Forming Unit, RL - Reporting Limit, AL - Action Level, NT - Not Tested

Color Key

| |
|----------------------|
| RESULT < 1/2 AL |
| 1/2 AL < RESULT < AL |
| RESULT > AL |

Reporting Limit (CFU/g)

1

"-" not detected above reporting limit

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Remarks:

PESTICIDES PROFILE

Analysis Date/Time: 08/14/2019 1946
Analyst: OL

Method: LC/MS/MS and GC/MS
Instrument: Waters Acquity/TQD

Deviations from SOP:
None

| Pesticide | Result (µg/g) | Action Level (µg/g) | Pesticide | Result (µg/g) | Action Level (µg/g) |
|-----------------------------------|---------------|---------------------|--------------------------------|---------------|---------------------|
| Abamectin (71751-41-2) | - | 0.5 | Imazalil (35554-44-0) | - | 0.2 |
| Acephate (30560-19-1) | - | 0.4 | Imidacloprid (138261-41-3) | - | 0.4 |
| Acequinocyl (57960-19-7) | - | 2 | Kresoxim-methyl* (143390-89-0) | - | 0.4 |
| Acetamiprid (135410-20-7) | - | 0.2 | Malathion (121-75-5) | - | 0.2 |
| Aldicarb (116-06-3) | - | 0.4 | Metalaxyl* (57837-19-1) | - | 0.2 |
| Azoxystrobin (131860-33-8) | - | 0.2 | Methiocarb (2032-65-7) | - | 0.2 |
| Bifenazate* (149877-41-8) | - | 0.2 | Methomyl (16752-77-5) | - | 0.4 |
| Bifenthrin* (82657-04-3) | - | 0.2 | Methyl parathion* (298-0-0) | - | 0.2 |
| Boscalid* (188425-85-6) | - | 0.4 | MGK 264* (113-48-4) | - | 0.2 |
| Carbaryl (63-25-2) | - | 0.2 | Myclobutanil (88671-89-0) | - | 0.2 |
| Carbofuran (1563-66-2) | - | 0.2 | Naled (300-76-5) | - | 0.5 |
| Chlorantraniliprole (800008-45-7) | - | 0.2 | Oxamyl (23135-22-0) | - | 1 |
| Chlorfenapyr* (122453-73-0) | - | 1 | Paclobutrazol* (76738-62-0) | - | 0.4 |
| Chlorpyrifos* (2921-88-2) | - | 0.2 | Permethrins* (52645-53-1) | - | 0.2 |
| Clofentezine (74115-24-5) | - | 0.2 | Phosmet* (732-11-6) | - | 0.2 |
| Cyfluthrin* (68359-37-5) | - | 1 | Piperonyl butoxide* (51-03-6) | - | 2 |
| Cypermethrin* (52315-07-8) | - | 1 | Prallethrin* (2331-36-9) | - | 0.2 |
| Daminozide (1596-84-5) | - | 1 | Propiconazole (60207-90-1) | - | 0.4 |
| DDVP (62-73-7) | - | 0.1 | Propoxur* (114-26-1) | - | 0.2 |
| Diazinon* (333-41-5) | - | 0.2 | Pyrethrins* (8003-34-7) | - | 1 |
| Dimethoate (60-51-5) | - | 0.2 | Pyridaben* (96489-71-3) | - | 0.2 |
| Ethoprophos* (13194-48-4) | - | 0.2 | Spinosad A (168316-95-8) | - | 0.2 |
| Etofenprox (80844-07-1) | - | 0.4 | Spinosad D (168316-95-8) | - | 0.2 |
| Etoxazole (153233-91-1) | - | 0.2 | Spiromesifen (283594-90-1) | - | 0.2 |
| Fenoxycarb (72490-01-8) | - | 0.2 | Spirotetramat (203313-25-1) | - | 0.2 |
| (E)-Fenpyroximate (134098-61-6) | - | 0.4 | Spiroxamine (118134-30-8) | - | 0.4 |
| Fipronil* (120068-37-3) | - | 0.4 | Tebuconazole (80443-41-0) | - | 0.4 |
| Fonicamid (158062-67-0) | - | 1 | Thiacloprid (111988-49-9) | - | 0.2 |
| Fludioxinil (131341-86-1) | - | 0.4 | Thiamethoxam (153719-23-4) | - | 0.2 |
| Hexythiazox (78587-05-0) | - | 1 | Trifloxystrobin* (141517-21-7) | - | 0.2 |



Color Key

| |
|----------------------|
| RESULT < 1/2 AL |
| 1/2 AL < RESULT < AL |
| RESULT > AL |

Reporting Limit (µg/g)
1/2 of AL

"-" not detected above reporting limit

"*" analyzed by GC/MS (all others analyzed by LC/MS/MS)

Permethrins measured as the cumulative residue of the *cis*- and *trans*-permethrin isomers.

Pyrethrin measures as the cumulative residue of pyrethrin I, cinerin I, and jasmolin I.

Abbreviations: LC - Liquid Chromatography, GC - Gas Chromatography, MS - Mass Spectrometry, RK - Reporting Limit, AL - Action Level, CAS - Chemical Abstract Services

| Pesticide | Synonym(s) | Pesticide | Synonym(s) | Pesticide | Synonym(s) |
|-------------|------------|--------------|------------|---------------|------------|
| Cyfluthrin | Baythroid | Myclobutanil | Systhane | Propiconazole | Tilt |
| DDVP | Dichlorvos | Naled | Dibrom | Propoxur | Baygon |
| Ethoprophos | Prophos | Phosmet | Imidan | | |

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Lab ID: SA2019-9181
Date Received: 08/06/2019

Sample Matrix: Industrial Hemp
Date Completed: 08/16/2019

Remarks:

CANNABINOID (POTENCY) PROFILE

Analysis Date/Time: 08/14/2019 1946
Analyst: OL

Method: HPLC/DAD (Internal Method-001)
Instrument: Agilent 1100

Moisture Content (%): 61.4
Water Activity (aw): -

| Cannabinoid | Result (%) | Result (mg/g) | Reporting Limit (mg/g) | Result (mg/mL) | Per Unit (mg) |
|------------------|--------------|---------------|------------------------|----------------|---------------|
| CBD | - | - | 0.0516 | - | - |
| CBDa | 3.91 | 39.1 | 0.0516 | - | 39 |
| CBDv | - | - | 0.0516 | - | - |
| Δ9-THC | - | - | 0.0516 | - | - |
| Δ8-THC | - | - | 0.0516 | - | - |
| THCa | 0.323 | 3.23 | 0.0516 | - | 3 |
| THCv | - | - | 0.0516 | - | - |
| CBC | - | - | 0.0516 | - | - |
| CBG | - | - | 0.0516 | - | - |
| CBGa | - | - | 0.0516 | - | - |
| CBN | - | - | 0.0516 | - | - |
| TOTAL | 4.23 | 16 | | | 42 |
| TOTAL THC | 0.283 | 1.09 | | | 3 |
| TOTAL CBD | 3.43 | 13 | | | 34 |

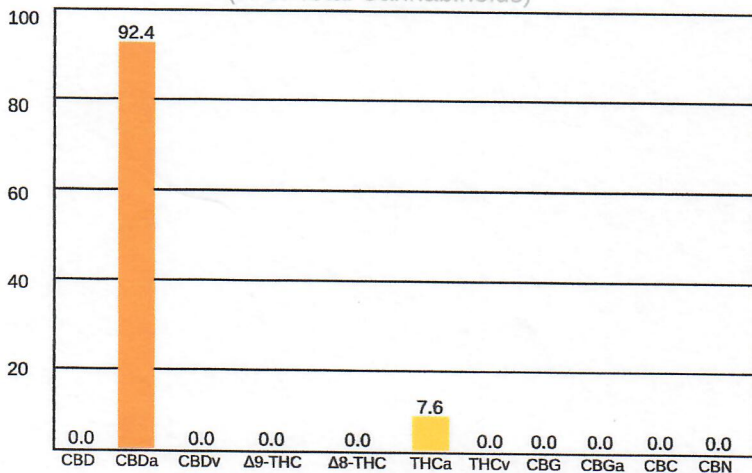


UNIT MASS (g): 1

"-" Not detected above RL.

Cannabinoid Distribution

(% of Total Cannabinoids)



Deviations from standard operating procedure: None

Recoveries for all analyte standards: 90-110%
Replicate Uncertainties: <5% RSD, <20% RPD
Sample/Reagent Blanks: <RL for all analytes

Values for plant matter are adjusted for moisture content.

Total THC = (THCa x 0.877) + Δ9-THC
Total CBD = (CBDa x 0.877) + CBD

Percentage results are reported by mass.
mg/g results are reported as mass component per mass material.

Abbreviations: UV - Ultraviolet, HPLC - High Pressure Liquid Chromatography, RL - Reporting Limit, RPD - Relative Percent Difference, RSD - Relative Standard Deviation

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Remarks:

HEAVY METAL PROFILE

Analysis Date/Time: 08/14/2019 1946
Analyst: OL

Method: ICP/MS
Instrument: PerkinElmer Elan 9000

Deviations from SOP:
None

| <u>Heavy Metal</u> | <u>Result</u> <u>(µg/kg)</u> | <u>Action Level</u> <u>(µg/kg)</u> |
|--------------------|---------------------------------|---------------------------------------|
| Arsenic (As) | - | 400 |
| Cadmium (Cd) | - | 440 |
| Lead (Pb) | - | 100 |
| Mercury (Hg) | - | 200 |



Abbreviations: ICP - Inductively-Coupled Plasma, OES - Optical Emission Spectroscopy, RL - Reporting Limit, AL - Action Level

Color Key

| |
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| RESULT < 1/2 AL |
| 1/2 AL < RESULT < AL |
| RESULT > AL |

Reporting Limit (µg/kg)
50

"-" not detected above reporting limit

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