



CERTIFICATE OF ANALYSIS

STATUS: **RELEASED** REVISION: 01

DATE: 12/07/2023

Analysis ID No. 233335
TDA License No. 2020002
ISO/IEC No. 1055838
Purchase Order: 20230800
Page No. Page 1 of 5

| CUSTOMER INFORMATION | SAMPLE INFORMATION |
|--|---|
| Client Name: [REDACTED] | Submitted Sample Name: Happy Hippo Cherry Lime |
| Address: [REDACTED] | Submitted Sample Lot: 17112023-1A |
| Phone Number: [REDACTED] | Submitted Sample Description: Red Gummies in Clear Resealable Bag; Stored at RT |
| Contact Name / Email: [REDACTED] | Submitted Sample Product Type / Matrix: Kratom Edible / Gummy |

| ALKALOIDS ASSAY | | | | | |
|--------------------|-------------|-----------|---|--|------------------|
| Analysis | Test Method | LOQ | Specifications | Test Results | Pass / Fail |
| Mitragynine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only mg/g: Report Only mg/unit: Report Only* | 0.322 w/w% 3.219 mg/g 19.312 mg/unit | Results Reported |
| Paynantheine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only mg/g: Report Only mg/unit: Report Only* | 0.027 w/w% 0.270 mg/g 1.620 mg/unit | Results Reported |
| Speciogynine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only mg/g: Report Only mg/unit: Report Only* | 0.022 w/w% 0.221 mg/g 1.323 mg/unit | Results Reported |
| Speciociliatine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only mg/g: Report Only mg/unit: Report Only* | 0.025 w/w% 0.252 mg/g 1.513 mg/unit | Results Reported |
| 7-OH-Mitragynine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only mg/g: Report Only mg/unit: Report Only* % of Total Alkaloids: NMT 2% | < 0.010 w/w% | PASS |
| Mitraphylline | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only mg/g: Report Only mg/unit: Report Only* | < 0.010 w/w% | Results Reported |
| Isorhynchophylline | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only mg/g: Report Only mg/unit: Report Only* | < 0.010 w/w% | Results Reported |
| Corynoxine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only mg/g: Report Only mg/unit: Report Only* | < 0.010 w/w% | Results Reported |
| Total Alkaloids | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only mg/g: Report Only mg/unit: Report Only* | 0.396 w/w% 3.961 mg/g 23.768 mg/unit | Results Reported |

| HEAVY METALS ASSAY | | | | | |
|--------------------|------------------------------|--------|----------------|--------------|-------------|
| Analysis | Test Method | LOQ | Specifications | Test Results | Pass / Fail |
| Lead | USP <232> <233> by ICP-MS | 10 ppb | NMT 1,000 ppb | 32.9 ppb | PASS |

Santé Laboratories, LLC - 8201 East Riverside Drive, STE 650, Austin, Texas 78744 USA
Email: Testing@santelabs.com - Telephone: 512-309-5830 - Website: www.santelabs.com

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Page No. Page 2 of 5

| HEAVY METALS ASSAY | | | | | |
|--------------------|------------------------------|--------|----------------|--------------|-------------|
| Analysis | Test Method | LOQ | Specifications | Test Results | Pass / Fail |
| Mercury | USP <232> <233> by ICP-MS | 5 ppb | NMT 500 ppb | < LOQ | PASS |
| Arsenic | USP <232> <233> by ICP-MS | 10 ppb | NMT 1,500 ppb | < LOQ | PASS |
| Cadmium | USP <232> <233> by ICP-MS | 10 ppb | NMT 300 ppb | < LOQ | PASS |
| Nickel | USP <232> <233> by ICP-MS | 50 ppb | NMT 20,000 ppb | 69.9 ppb | PASS |

| MICROBIOLOGICAL ASSAY | | | | | |
|----------------------------------|----------------|------------|-------------------|--------------|-------------|
| Analysis | Test Method | LOQ | Specifications | Test Results | Pass / Fail |
| Total Aerobic Plate Count (TAPC) | Isolation Agar | 10 CFU/gm | NMT 10,000 CFU/gm | < LOQ | PASS |
| Total Yeast & Mold (TYM) | Isolation Agar | 10 CFU/gm | NMT 1,000 CFU/gm | < LOQ | PASS |
| Coliforms | Isolation Agar | 10 CFU/gm | NMT 100 CFU/gm | < LOQ | PASS |
| Escherichia coli (E.coli) | Isolation Agar | 1 CFU/1 gm | Absent in 10 gm | Absent | PASS |
| Salmonella | Isolation Agar | 1 CFU/1 gm | Absent in 25 gm | Absent | PASS |

| RESIDUAL SOLVENTS ASSAY | | | | | |
|-------------------------------|-----------------------|-----------|----------------|--------------|-------------|
| Analysis | Test Method | LOQ | Specifications | Test Results | Pass / Fail |
| 1,1-Dichloroethene | USP <467> by GC-MS | 0.020 ppm | NMT 8 ppm | < LOQ | PASS |
| 1,1,1-Trichloroethane | USP <467> by GC-MS | 3.75 ppm | NMT 1,500 ppm | < LOQ | PASS |
| 1,2-Dichloroethane | USP <467> by GC-MS | 0.013 ppm | NMT 5 ppm | < LOQ | PASS |
| Benzene | USP <467> by GC-MS | 0.005 ppm | NMT 2 ppm | < LOQ | PASS |
| Carbon tetrachloride | USP <467> by GC-MS | 0.010 ppm | NMT 4 ppm | < LOQ | PASS |
| 1,2-dichloroethene (E,Z) | USP <467> by GC-MS | 4.675 ppm | NMT 1870 ppm | < LOQ | PASS |
| 1,2-Dimethoxyethane | USP <467> by GC-MS | 0.25 ppm | NMT 100 ppm | < LOQ | PASS |
| 1,2,3,4-tetrahydronaphthalene | USP <467> by GC-MS | 0.25 ppm | NMT 100 ppm | < LOQ | PASS |
| 1,4-Dioxane | USP <467> by GC-MS | 0.95 ppm | NMT 380 ppm | < LOQ | PASS |
| 2-Hexanone | USP <467> by GC-MS | 0.125 ppm | NMT 50 ppm | < LOQ | PASS |
| 4-methyl-2-pentanone | USP <467> by GC-MS | 12.5 ppm | NMT 4,500 ppm | < LOQ | PASS |
| Acetonitrile | USP <467> by GC-MS | 1.025 ppm | NMT 410 ppm | < LOQ | PASS |
| Chlorobenzene | USP <467> by GC-MS | 0.9 ppm | NMT 360 ppm | < LOQ | PASS |



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Page No. Page 3 of 5

| RESIDUAL SOLVENTS ASSAY | | | | | |
|-------------------------|-----------------------|-----------|----------------|--------------|-------------|
| Analysis | Test Method | LOQ | Specifications | Test Results | Pass / Fail |
| Chloroform | USP <467> by GC-MS | 0.15 ppm | NMT 60 ppm | < LOQ | PASS |
| Cumene | USP <467> by GC-MS | 0.175 ppm | NMT 70 ppm | < LOQ | PASS |
| Cyclohexane | USP <467> by GC-MS | 9.7 ppm | NMT 3,880 ppm | < LOQ | PASS |
| Dichloromethane | USP <467> by GC-MS | 1.5 ppm | NMT 600 ppm | < LOQ | PASS |
| Ethylbenzene | USP <467> by GC-MS | 5.425 ppm | NMT 2,170 ppm | < LOQ | PASS |
| Hexane, n- | USP <467> by GC-MS | 0.725 ppm | NMT 290 ppm | < LOQ | PASS |
| Methanol | USP <467> by GC-MS | 7.5 ppm | NMT 3,000 ppm | < LOQ | PASS |
| Methylcyclohexane | USP <467> by GC-MS | 2.95 ppm | NMT 1,180 ppm | < LOQ | PASS |
| Nitromethane | USP <467> by GC-MS | 0.125 ppm | NMT 50 ppm | < LOQ | PASS |
| Pyridine | USP <467> by GC-MS | 0.50 ppm | NMT 200 ppm | < LOQ | PASS |
| Tetrahydrofuran | USP <467> by GC-MS | 1.8 ppm | NMT 720 ppm | < LOQ | PASS |
| Toluene | USP <467> by GC-MS | 2.225 ppm | NMT 890 ppm | < LOQ | PASS |
| Trichloroethene | USP <467> by GC-MS | 0.20 ppm | NMT 80 ppm | < LOQ | PASS |
| Xylene, m- | USP <467> by GC-MS | 108.5 ppm | NMT 2,170 ppm | < LOQ | PASS |
| Xylene, o- | USP <467> by GC-MS | 5.425 ppm | NMT 2,170 ppm | < LOQ | PASS |
| Xylene, p- | USP <467> by GC-MS | 5.425 ppm | NMT 2,170 ppm | < LOQ | PASS |
| 1-Butanol | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| 1-Pentanol | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| 1-Propanol | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| 2-Butanol | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| 2-Butanone | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| 2-methyl-1-propanol | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| 2-Propanol | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| 3-methyl-1-butanol | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Acetone | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |

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 Page No. Page 4 of 5

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|-------------------------|-----------------------|----------|----------------|--------------|-------------|
| Analysis | Test Method | LOQ | Specifications | Test Results | Pass / Fail |
| Anisole | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Butyl acetate | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Ethanol | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Ethyl acetate | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Ethyl ether | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Ethyl formate | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Heptane, n- | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Isobutyl acetate | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Isopropyl acetate | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Methyl acetate | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| N,N-Dimethylsulfoxide | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Pentane, n- | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Propyl acetate | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| t-Butyl Methyl Ether | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Butane, iso- | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Butane, n- | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |
| Propane | USP <467> by GC-MS | 12.5 ppm | NMT 5,000 ppm | < LOQ | PASS |

| TESTING FACILITY INFORMATION | SAMPLE INFORMATION |
|--|--|
| Santé Laboratories 8201 East Riverside Drive, STE 650 Austin, Texas 78744 USA | Santé Sample ID: 233335 Receipt Date: 11/30/2023 / 10:45 AM CST / J. Leiva Receipt Condition: Good Analysis Start Date: 11/30/2023 |

| ADDITIONAL REPORT NOTES |
|--|
| <p>The reported results presented in this document is only applicable to samples submitted to Santé Laboratories for testing and may not represent the entire lot and/or batch produced by the manufacturer. Heavy metal specifications according to limits defined by Texas DSHS for consumable hemp. Nickel specification according to oral drug products per USP <232>. Microbiological limits according to specifications defined by AHPA for botanical extracts. * Unit Weight: 6.00 grams, this is provided by the customer.</p> <p>©2020 Santé Laboratories, LLC – All Rights Reserved</p> |

| VERSION HISTORY | | |
|-----------------|----------------|--------------------|
| Version | Effective Date | Summary of Changes |
| 00 | 12/06/2023 | Initial Release |

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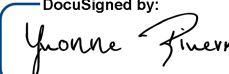
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ISO/IEC No. 1055838
Purchase Order: 20230800
Page No. Page 5 of 5

| | | |
|----|------------|--|
| 01 | 12/07/2023 | Updated to Customer Unit Weight for Alkaloid Assay |
|----|------------|--|



| REVIEWED AND APPROVED BY | |
|---|--|
| <p>DocuSigned by:  <small>E49DDA643188484...</small> Yvonne Rivera Data Management Specialist Santé Laboratories</p> | <p>07 December 2023 3:13:00 PM PST</p> <hr/> <p>Date</p> |