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# CERTIFICATE OF ANALYSIS

**STATUS:** RELEASED **REVISION:** 00
**DATE:** 08/04/2023



| CUSTOMER INFORMATION | SAMPLE INFORMATION |
|---|---|
| **Company Name:** | **Submitted Sample Name:** |
| Kats Botanicals | Kratom Leaf-Extract Powder |
| **Address:** | **Submitted Sample Lot:** |
| 619 Old Hickory Blvd, Old Hickory, TN 37138 | 295296RREP |
| **Phone Number:** | **Submitted Sample Description:** |
| 877-301-9923 | Green Powder in White Resealable Bag; Stored at RT |
| **Contact Name / Email:** | **Submitted Sample Product Type / Matrix:** |
| Not Provided | Kratom Extract / Powder |

**ALKALOIDS ASSAY**

| Analysis | Test Method | LOQ | Specifications | Test Results | Pass / Fail |
|---|---|---|---|---|---|
| Mitragynine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only<br>mg/g: Report Only | 2.082 w/w%<br>20.822 mg/g | Results Reported |
| Paynantheine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only<br>mg/g: Report Only | 0.385 w/w%<br>3.849 mg/g | Results Reported |
| Speciogynine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only<br>mg/g: Report Only | 0.322 w/w%<br>3.223 mg/g | Results Reported |
| Speciociliatine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only<br>mg/g: Report Only | 0.563 w/w%<br>5.631 mg/g | Results Reported |
| 7-OH-Mitragynine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only<br>mg/g: Report Only<br>% of Total Alkaloids: NMT 2% | < 0.010 w/w% | PASS |
| Mitraphylline | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only<br>mg/g: Report Only | < 0.010 w/w% | Results Reported |
| Isorhynchophylline | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only<br>mg/g: Report Only | < 0.010 w/w% | Results Reported |
| Corynoxine | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only<br>mg/g: Report Only | 0.025 w/w%<br>0.246 mg/g | Results Reported |
| Total Alkaloids | UHPLC-DAD | 0.01 w/w% | w/w%: Report Only<br>mg/g: Report Only | 3.377 w/w%<br>33.772 mg/g | Results Reported |

**MICROBIOLOGICAL ASSAY**

| Analysis | Test Method | LOQ | Specifications | Test Results | Pass / Fail |
|---|---|---|---|---|---|
| Total Aerobic Plate Count (TAPC) | Isolation Agar | 20 CFU/gm | NMT 10,000,000 CFU/gm | 1,860 CFU/gm | PASS |
| Total Yeast & Mold (TYM) | Isolation Agar | 20 CFU/gm | NMT 100,000 CFU/gm | < LOQ | PASS |
| Coliforms | Isolation Agar | 20 CFU/gm | NMT 10,000 CFU/gm | < LOQ | PASS |
| Escherichia coli (E.coli) | Isolation Agar | 1 CFU/10 gm | Absent in 10 gm | Absent | PASS |
| Salmonella | Isolation Agar | 1 CFU/25 gm | Absent in 25 gm | Absent | PASS |


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| HEAVY METALS ASSAY | | | | | |
|---|---|---|---|---|---|
| **Analysis** | **Test Method** | **LOQ** | **Specifications** | **Test Results** | **Pass / Fail** |
| Lead | USP <232> <233> by ICP-MS | 0.01 mcg/g | NMT 1.250 mcg/g | 0.817 mcg/g | PASS |
| Mercury | USP <232> <233> by ICP-MS | 0.005 mcg/g | NMT 0.200 mcg/g | 0.020 mcg/g | PASS |
| Arsenic | USP <232> <233> by ICP-MS | 0.01 mcg/g | NMT 1.000 mcg/g | 0.187 mcg/g | PASS |
| Cadmium | USP <232> <233> by ICP-MS | 0.01 mcg/g | NMT 0.400 mcg/g | 0.021 mcg/g | PASS |
| Nickel | USP <232> <233> by ICP-MS | 0.05 mcg/g | NMT 20.000 mcg/g | 3.517 mcg/g | 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-tetrahydronapthalene | 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 |
| 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 |


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| RESIDUAL SOLVENTS ASSAY | | | | | |
|---|---|---|---|---|---|
| **Analysis** | **Test Method** | **LOQ** | **Specifications** | **Test Results** | **Pass / Fail** |
| 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 |
| 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 |


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**DATE**: 08/04/2023



| RESIDUAL SOLVENTS ASSAY | | | | | |
|---|---|---|---|---|---|
| **Analysis** | **Test Method** | **LOQ** | **Specifications** | **Test Results** | **Pass / Fail** |
| 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**<br>8201 East Riverside Drive, STE 650<br>Austin, Texas 78744 USA | **Santé Sample ID:** 232400<br>**Receipt Date:** 08/01/2023 / 5:30 PM CST / P.Steinberg<br>**Receipt Condition:** Good **Analysis Start Date:** 08/02/2023 |

**ADDITIONAL REPORT NOTES**

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 provided by Customer. Microbiological specifications follow AHPA guidelines for botanical ingredients (non-extract).**
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| VERSION HISTORY | | |
|---|---|---|
| **Version** | **Effective Date** | **Summary of Changes** |
| 00 | 08/04/2023 | Initial Release |


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| | |
|---|---|
| **Analysis ID No.** | 232400 |
| **TDA License No.** | 2020002 |
| **ISO/IEC No.** | 1055838 |
| **Purchase Order:** | 20230569 |
| **Page No.** | Page 5 of 5 |

## PRODUCT SAMPLE / IMAGE




## REVIEWED AND APPROVED BY

DocuSigned by:
Yvonne Rivera
E49DDA845186484...

**Yvonne Rivera**
Data Management Specialist
Santé Laboratories

04 August 2023 | 5:07:12 PM PDT
Date


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