

# CERTIFICATE OF ANALYSIS



**SAMPLE NAME:** PART# 30038 MIT45 SUPER K (30ML) 12 PACK

**SAMPLE CODE:** DTS-241202-017

**CLIENT:** MIT45

**BATCH RESULT:** PASS

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License #:



**MATRIX NAME:** Tincture - Oil Based  
**SAMPLE TYPE:** Quality Assurance  
**RECEIVED DATE:** Tue, Dec 3, 2024  
**PUBLISHED DATE:** Tue, Dec 10, 2024  
**BATCH/LOT CODE:** 00-1872  
**BATCH SIZE:** N/A  
**SAMPLE SIZE:** 9U  
**AVERAGE UNIT WEIGHT:** 35.619g (Density (1.1873 g/mL) x 30mL package. 2 servings/package.)

<b>MITRAGYNINE</b>	83.19 mg / serv
<b>TOTAL MAJOR ALKALOIDS</b>	118.65 mg / serv
<b>TOTAL MINOR ALKALOIDS</b>	0.02 mg / serv

<b>ALKU</b> ✓ Kratom Alkaloids High Level	<b>ALKL</b> ✓ Kratom Alkaloids Low Level	<b>SOL</b> ✓ Residual Solvents USP <467>	<b>SAL</b> ✓ Salmonella 25g qPCR	<b>ECOLI</b> ✓ Total E. Coli & Coliforms Plate
<b>PGUSP</b> ✓ Pesticides USP <561>	<b>PLUSP</b> ✓ Pesticides USP <561>	<b>TAMC</b> ✓ Total Aerobic Bacteria Plate	<b>DEN</b> ✓ Density of Liquids	<b>SAUR</b> ✓ Staphylococcus aureus Plate
<b>AWA</b> ✓ Water Activity	<b>HVMET</b> ✓ Heavy Metals 4	<b>TYMFD</b> ✓ Total Yeast & Mold Plate	<b>FTIRR</b> ✓ Identification by FTIR Report	

## APPROVALS

**RESULTS REVIEWED BY:**

**Leslie Varela**  
Laboratory Director

Cambium Analytica  
Tuesday, Dec 10, 2024

**RESULTS CERTIFIED BY:**

**Douglas Smith**  
VP - Scientific Operations

Cambium Analytica  
Tuesday, Dec 10, 2024

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ALKU

**KRATOM ALKALOIDS - HIGH LEVEL**LAB-TM-052 - DETERMINATION OF KRATOM ALKALOID CONTENT BY UPLC-DAD  
ALKU-DTS-241202-017-01 - FRI, DEC 6, 2024

ANALYTE	VALUE	VALUE (MG/G)	PER SERVING	PER PACKAGE	ACTION LIMIT	LOD	LOQ	STATUS
Mitragynine	0.467 %	4.671 mg/g	83.19 mg	166.38 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Paynantheine	0.094 %	0.945 mg/g	16.83 mg	33.66 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Speciociliatine	0.055 %	0.554 mg/g	9.87 mg	19.73 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Speciogynine	0.049 %	0.492 mg/g	8.76 mg	17.52 mg	N/A	0.3 ug/g	0.5 ug/g	N/A
Total Major Alkaloids	0.666 %	6.662 mg/g	118.65 mg	237.29 mg	N/A	N/A	N/A	N/A

ALKL

**KRATOM ALKALOIDS - LOW LEVEL**LAB-TM-047 - DETERMINATION OF KRATOM ALKALOID CONTENT BY LC-TQ  
ALKL-DTS-241202-017-01 - FRI, DEC 6, 2024

ANALYTE	VALUE	VALUE (MG/G)	PER SERVING	PER PACKAGE	ACTION LIMIT	LOD	LOQ	STATUS
7-Hydroxymitragynine	0.00013 %	0.00128 mg/g	0.02 mg	0.05 mg	N/A	0.002 ug/g	0.011 ug/g	N/A
Mitraphylline	0.00001 %	0.00006 mg/g	0.00 mg	0.00 mg	N/A	0.004 ug/g	0.019 ug/g	N/A
Total Minor Alkaloids	0.00013 %	0.00134 mg/g	0.02 mg	0.05 mg	N/A	0.006 ug/g	0.03 ug/g	N/A



SOL

## RESIDUAL SOLVENTS - USP &lt;467&gt;

LAB-TM-004 - DETERMINATION OF RESIDUAL SOLVENTS  
SOL-DTS-241202-017-01 - THU, DEC 5, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
1,2-Dichloroethane	ND	5 ug/g	0.4 ug/g	1.34 ug/g	PASS
2-Methylbutane	ND	N/A	1.54 ug/g	5.14 ug/g	N/A
2-Methylpentane	ND	N/A	0.046 ug/g	0.154 ug/g	N/A
2,2-Dimethylbutane	ND	N/A	0.98 ug/g	3.27 ug/g	N/A
2,3-Dimethylbutane	ND	N/A	2.19 ug/g	7.32 ug/g	N/A
3-Methylpentane	ND	N/A	0.73 ug/g	2.44 ug/g	N/A
Acetone	ND	5000 ug/g	1.57 ug/g	5.23 ug/g	PASS
Acetonitrile	ND	410 ug/g	1.85 ug/g	6.17 ug/g	PASS
Benzene	ND	2 ug/g	0.18 ug/g	0.59 ug/g	PASS
Butane	ND	N/A	1.68 ug/g	5.59 ug/g	N/A
Chloroform	ND	60 ug/g	0.78 ug/g	2.59 ug/g	PASS
Ethanol	ND	5000 ug/g	6.02 ug/g	20.1 ug/g	PASS
Ethyl Acetate	ND	5000 ug/g	1.95 ug/g	6.49 ug/g	PASS
Ethyl Ether	ND	5000 ug/g	1.37 ug/g	4.55 ug/g	PASS
Ethylene Oxide	ND	N/A	0.15 ug/g	0.49 ug/g	N/A
Heptane	ND	5000 ug/g	1.31 ug/g	4.37 ug/g	PASS
Hexane	ND	290 ug/g	1.42 ug/g	4.74 ug/g	PASS
Isobutane	ND	N/A	1.6 ug/g	5.34 ug/g	N/A
Isopropyl Alcohol	ND	N/A	4.9 ug/g	16.3 ug/g	N/A
Methanol	ND	3000 ug/g	7.89 ug/g	26.4 ug/g	PASS
Methylene Chloride	ND	600 ug/g	1.36 ug/g	4.53 ug/g	PASS
Neopentane	ND	N/A	1.49 ug/g	4.97 ug/g	N/A
Pentane	ND	5000 ug/g	1.46 ug/g	4.87 ug/g	PASS
Propane	ND	N/A	1.95 ug/g	6.51 ug/g	N/A
Toluene	ND	890 ug/g	1.88 ug/g	6.26 ug/g	PASS
Total Xylenes	ND	2170 ug/g	2.02 ug/g	6.72 ug/g	PASS
Trichloroethylene	ND	80 ug/g	0.29 ug/g	0.96 ug/g	PASS
Butanes (Sum of Butane and Isobutane)	ND	N/A			N/A
Hexanes (Sum of Hexane, 2,2-Dimethylbutane, 2,3-Dimethylbutane, 2-Methylpentane, and 3-Methylpentane)	ND	290 ug/g			PASS
Pentanes (Sum of Pentane, 2-Methylbutane, and Neopentane)	ND	5000 ug/g			PASS



**SAL** **SALMONELLA - 25G QPCR**  
LAB-TM-063 - DETECTION AND ISOLATION OF SALMONELLA SPP. IN FOODS AND DIETARY SUPPLEMENTS  
SAL-DTS-241202-017-01 - THU, DEC 5, 2024



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Salmonella Spp	ND	Detection	N/A	N/A	PASS

**ECOLI** **TOTAL E. COLI & COLIFORMS - PLATE**  
LAB-TM-059 - ENUMERATION OF ESCHERICHIA COLI AND TOTAL COLIFORM IN FOODS AND DIETARY SUPPLEMENTS  
ECOLI-DTS-241202-017-01 - THU, DEC 5, 2024



ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
E. coli	ND	Detection	10 CFU/g	10 CFU/g	PASS
Total Coliforms	ND	1000 CFU/g	10 CFU/g	10 CFU/g	PASS



PGUSP

## PESTICIDES - USP &lt;561&gt; - GC/TQ

LAB-TM-039 - USP 561 PESTICIDES ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY GC/TQ  
PGUSP-DTS-241202-017-01 - TUE, DEC 10, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Aldrin + Dieldrin	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Bromophos Ethyl	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Bromophos Methyl	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Bromopropylate	ND	3 ug/g	6 ng/g	12 ng/g	PASS
Chlordane (Sum of -Cis, -Trans, Oxychlordane)	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Chlorthal-Dimethyl	ND	0.01 ug/g	0.02 ng/g	0.04 ng/g	PASS
DDT (Sum of O,P-DDE, P,P-DDE, O,P-DDT, P,P-DDT, O,P-TDE, and P,P-TDE)	ND	1 ug/g	2 ng/g	4 ng/g	PASS
Dicofol	ND	0.5 ug/g	1 ng/g	2 ng/g	PASS
Endosulfan (Sum of Isomers and Sulphate)	ND	3 ug/g	6 ng/g	12 ng/g	PASS
Endrin	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Fenchlorophos (Sum of Fenchlorophos and Fenchlorophos-Oxon)	ND	0.1 ug/g	0.2 ng/g	0.4 ng/g	PASS
Fenitrothion	ND	0.5 ug/g	1 ng/g	2 ng/g	PASS
Fenvalerate	ND	1.5 ug/g	3 ng/g	6 ng/g	PASS
Fluvalinate-Tau	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Heptachlor (Sum of Heptachlor, Cis-Heptachlorepoide, and Trans-Heptachlorepoide)	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Hexachlorobenzene	ND	0.1 ug/g	0.2 ng/g	0.4 ng/g	PASS
Hexachlorocyclohexane (Sum of Isomers Alpha-, Beta-, Delta-, and Epsilon-)	ND	0.3 ug/g	0.6 ng/g	1.2 ng/g	PASS
Lindane (Gamma-Hexachlorocyclohexane)	ND	0.6 ug/g	1.2 ng/g	2.4 ng/g	PASS
Methacrifos	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Methoxychlor	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Mirex	ND	0.01 ug/g	0.02 ng/g	0.04 ng/g	PASS
Parathion Ethyl + Paraoxon Ethyl	ND	0.5 ug/g	1 ng/g	2 ng/g	PASS
Pentachloroanisole	ND	0.01 ug/g	0.02 ng/g	0.04 ng/g	PASS
Procymidone	ND	0.1 ug/g	0.2 ng/g	0.4 ng/g	PASS
Quintozene (Sum of Quintozene, Pentachloroaniline, and Methyl-Pentachlorophenyl Sulfide)	ND	1 ug/g	2 ng/g	4 ng/g	PASS



PGUSP

**PESTICIDES - USP <561> - GC/TQ**LAB-TM-039 - USP 561 PESTICIDES ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY GC/TQ  
PGUSP-DTS-241202-017-01 - TUE, DEC 10, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
S-421	ND	0.02 ug/g	0.04 ng/g	0.08 ng/g	PASS
Tecnazene	ND	0.05 ug/g	0.1 ng/g	0.2 ng/g	PASS
Tetradifon	ND	0.3 ug/g	0.6 ng/g	1.2 ng/g	PASS
Vinclozolin	ND	0.4 ug/g	0.8 ng/g	1.6 ng/g	PASS



PLUSP

## PESTICIDES - USP &lt;561&gt; - LC/TQ

LAB-TM-038 - USP 561 PESTICIDE ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY LC/TQ  
PLUSP-DTS-241202-017-01 - FRI, DEC 6, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Acephate	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Alachlor	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Azinphos Ethyl	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Azinphos Methyl	ND	1 ug/g	12.5 ng/g	25 ng/g	PASS
Chlorfenvinphos	ND	0.5 ug/g	12.5 ng/g	25 ng/g	PASS
Chlorpyrifos Ethyl	ND	0.2 ug/g	12.5 ng/g	25 ng/g	PASS
Cyfluthrin	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Cypermethrin	0.043 ug/g	1 ug/g	12.5 ng/g	25 ng/g	PASS
Deltamethrin	ND	0.5 ug/g	12.5 ng/g	25 ng/g	PASS
Diazinon	ND	0.5 ug/g	12.5 ng/g	25 ng/g	PASS
Dichlorvos	ND	1 ug/g	12.5 ng/g	25 ng/g	PASS
Dimethoate + Omethoate	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Ethion	ND	2 ug/g	12.5 ng/g	25 ng/g	PASS
Etrimphos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Fenpropathrin	ND	0.03 ug/g	12.5 ng/g	25 ng/g	PASS
Fensulfothion (Sum of Fensulfothion, Fensulfothion-Oxon, Fensulfothion-Oxon-Sulfone, and Fensulfothion-Sulfone)	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Fenthion (Sum of Fenthion, Fenthion-Oxon, Fenthion-Oxon-Sulfone, Fenthion-Oxon-Sulfoxide, Fenthion-Sulfone, and Fenthion-Sulfoxide)	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Flucythrinate	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Fonophos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Lambda-Cyhalothrin	ND	1 ug/g	12.5 ng/g	25 ng/g	PASS
Malathion + Malaoxon	ND	1 ug/g	12.5 ng/g	25 ng/g	PASS
Mecarbam	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Methamidophos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Methidathion	ND	0.2 ug/g	12.5 ng/g	25 ng/g	PASS
Monocrotophos	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Pendimethalin	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Permethrins (Sum of Cis- and Trans-Permethrin)	ND	1 ug/g	12.5 ng/g	25 ng/g	PASS
Phosalone	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Phosmet	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS



PLUSP

## PESTICIDES - USP &lt;561&gt; - LC/TQ

LAB-TM-038 - USP 561 PESTICIDE ANALYSIS IN ARTICLES OF BOTANICAL ORIGIN BY LC/TQ  
PLUSP-DTS-241202-017-01 - FRI, DEC 6, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Piperonyl Butoxide	ND	3 ug/g	12.5 ng/g	25 ng/g	PASS
Pirimiphos Ethyl	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Pirimiphos Methyl (Sum of Pirimiphos-Methyl and n- Desethyl-Pirimiphos-Methyl)	ND	4 ug/g	12.5 ng/g	25 ng/g	PASS
Profenophos	ND	0.1 ug/g	12.5 ng/g	25 ng/g	PASS
Prothiophos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS
Pyrethrins (Sum of Cinerin 1, Jasmolin 1, and Pyrethrin 1)	ND	3 ug/g	12.5 ng/g	25 ng/g	PASS
Quinalphos	ND	0.05 ug/g	12.5 ng/g	25 ng/g	PASS





TAMC

**TOTAL AEROBIC BACTERIA - PLATE**LAB-TM-060 - ENUMERATION OF TOTAL AEROBIC COUNT IN FOODS AND DIETARY SUPPLEMENTS  
TAMC-DTS-241202-017-01 - THU, DEC 5, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Aerobic Count	ND	10000 CFU/g	100 CFU/g	100 CFU/g	PASS

DEN

**DENSITY OF LIQUIDS**LAB-TM-017 - BRUX & DENSITY ANALYSIS  
DEN-DTS-241202-017-01 - WED, DEC 4, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Density	1.187 g/mL	N/A	N/A	N/A	N/A

SAUR

**STAPHYLOCOCCUS AUREUS - PLATE**LAB-TM-062 - ENUMERATION OF STAPHYLOCOCCUS AUREUS IN FOODS AND DIETARY SUPPLEMENTS  
SAUR-DTS-241202-017-01 - THU, DEC 5, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
S. aureus	ND	Detection	10 CFU/g	10 CFU/g	PASS

AWA

**WATER ACTIVITY**LAB-TM-009 - DETERMINATION OF WATER ACTIVITY  
AWA-DTS-241202-017-01 - THU, DEC 5, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Water Activity	0.762 aw	N/A	N/A	N/A	N/A

HVMET

**HEAVY METALS - 4**LAB-TM-044 - DETERMINATION OF HEAVY METALS BY ICP-MS  
HVMET-DTS-241202-017-01 - THU, DEC 5, 2024

ANALYTE	VALUE	VALUE (MG/G)	PER SERVING	PER PACKAGE	ACTION LIMIT	LOD	LOQ	STATUS
Arsenic	ND	N/A	N/A	N/A	1.00 ug/g	0.198 ug/kg	0.662 ug/kg	PASS
Cadmium	ND	N/A	N/A	N/A	1.00 ug/g	0.082 ug/kg	0.272 ug/kg	PASS
Lead	ND	N/A	N/A	N/A	3.00 ug/g	0.155 ug/kg	0.515 ug/kg	PASS
Mercury	ND	N/A	N/A	N/A	1.00 ug/g	0.017 ug/kg	0.057 ug/kg	PASS

TYMFD

**TOTAL YEAST & MOLD - PLATE**LAB-TM-061 - ENUMERATION OF YEAST AND MOLD IN FOODS AND DIETARY SUPPLEMENTS  
TYMFD-DTS-241202-017-01 - FRI, DEC 6, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Total Yeast and Mold	ND	100 CFU/g	100 CFU/g	100 CFU/g	PASS

FTIRR

**IDENTIFICATION BY FTIR - REPORT**NULL IDENTIFICATION BY FTIR  
FTIRR-DTS-241202-017-01 - WED, DEC 4, 2024

ANALYTE	VALUE	ACTION LIMIT	LOD	LOQ	STATUS
Quality Index Score	99.953 %	95-100 %			PASS

