



Essential Oil University

GC/MS Report

Item	Lot
Clove Bud EO <i>Eugenia caryophyllata</i>	4G
Date	Analyst
5/16/2024	Dr. Robert S. Pappas

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The analysis of this batch sample, Clove Bud EO, meets the expected chemical profile for authentic essential oil of *Eugenia caryophyllata*. No contamination or adulteration was detected. The results provided in this GCMS quality analysis reflect the chemical composition of the oil and lot referenced above on the date of analysis.



Sample Information

Company: Revive**Sample Name:** Clove Bud EO**Botanical Name:** *Eugenia caryophyllata***Lot Number:** 4G**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Madagascar**Analysis Date:** 5/16/2024**Date of Distillation:** May 2024

GC/MS

Inst. ID: Shimadzu GCMS-QP2010Ultra**Injection Type:** Split**Split Ratio:** 24.4**Column Type:** ZB-5**Injection Volume:** 0.1 µL**Temperature Program:** 2C/min

Physical Data

ANALYSIS

Optical Rotation @20°C

Refractive Index @20°C

Specific Gravity @20°C

METHOD

USP[781]

USP[831]

USP[841]

RESULTS

-.48

1.53491

1.06035



Ret. Time	Component	Ret. Idx.	Conc. %	
17.905	Limonene	1019	0.01%	IFRA
28.839	Methyl salicylate	1180	0.09%	
32.870	Chavicol	1239	0.08%	
39.328	alpha-Cubebene	1334	0.03%	
39.830	Eugenol	1342	79.41%	IFRA
41.220	alpha-Copaene	1363	0.11%	
42.761	Methyleugenol	1386	0.02%	IFRA
43.061	Unidentified	1391	0.01%	
44.015	beta-Caryophyllene	1405	6.12%	
46.246	alpha-Humulene	1441	0.91%	
47.279	cis-Murrola-4(14),5-diene	1457	0.02%	
48.756	Unidentified	1481	0.01%	
48.943	Unidentified	1484	0.01%	
49.291	trans,trans-alpha-Farnesene	1490	0.02%	
49.908	Eugenyl acetate	1499	12.67%	
50.108	delta-Cadinene	1503	0.11%	
50.295	cis-Calamenene	1506	0.03%	
50.968	trans-Cadina-1,4-diene	1517	0.01%	
51.980	Unidentified	1534	0.01%	
52.267	Unidentified	1539	0.02%	
53.866	Caryophyllene oxide	1566	0.22%	
54.499	Unidentified	1576	0.01%	
55.483	Humulene epoxide II	1593	0.02%	
57.024	Caryophylla-4(12),8(13)-dien-5-beta-ol	1620	0.02%	
58.077	14-Hydroxy-9-epi-(Z)-Caryophyllene	1639	0.03%	
58.902	14-Hydroxy-9-epi-(E)-Caryophyllene	1653	0.02%	
97.003	Unidentified	2465	0.02%	

Total Identified Compounds **99.95 %**

