



Essential Oil University

GC/MS Report

Item	Lot
Peppermint EO <i>Mentha piperita</i>	9AL
Date	Analyst
1/14/2025	Dr. Robert S. Pappas

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The analysis of this batch sample, Peppermint EO, meets the expected chemical profile for authentic essential oil of *Mentha piperita*. 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: Peppermint EO
Botanical Name: Mentha piperita
Lot Number: 9AL
Production Method: Steam distilled

Sample Type: EO - Single
Country of Origin: India
Analysis Date: 1/14/2025
Manufacture Date: April 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

-27.08
1.46095
0.90209



Ret. Time	Component	Ret. Idx.	Conc. %	
4.196	3-Methylbutanal	672	0.01%	
4.314	2-Methylbutanal	677	0.02%	
4.546	3-Penten-2-ol	687	0.01%	
5.407	3-Methyl 1-butanol	724	0.01%	
5.487	Unidentified	727	0.01%	
10.870	2,5-Diethyltetrahydrofuran	891	0.02%	
12.412	alpha-Thujene	921	0.04%	
12.832	alpha-Pinene	928	0.9%	
13.760	Camphene	944	0.03%	
13.952	Unidentified	948	0.01%	
15.048	Sabinene	967	0.5%	
15.362	beta-Pinene	973	0.98%	
15.744	3-Octanone	979	0.02%	
15.986	Myrcene	984	0.15%	
16.421	Octan-3-ol	991	0.12%	
16.922	Pseudolimonene	1000	0.01%	
17.071	alpha-Phellandrene	1002	0.02%	
17.740	alpha-Terpinene	1012	0.21%	
18.222	para-Cymene	1020	0.11%	
18.536	Limonene	1024	2.16%	IFRA
18.665	beta-Phellandrene	1026	0.06%	
18.739	1,8-Cineole	1027	5.45%	
18.923	cis-beta-Ocimene	1030	0.16%	
19.619	trans-beta-Ocimene	1040	0.04%	
20.425	gamma-Terpinene	1053	0.31%	
21.220	trans-Sabinene hydrate	1065	0.25%	
22.252	Terpinolene	1080	0.09%	
23.058	Nonan-3-ol	1092	0.01%	
23.202	Linalool	1094	0.12%	IFRA
23.304	trans-Sabinene hydrate	1096	0.03%	
23.432	2-Methylbutyl-2-methylbutyrate	1098	0.03%	
23.808	2-Methylbutyl isovalerate	1103	0.03%	
24.562	3-Octyl acetate	1114	0.01%	
24.934	cis-para-Menth-2-en-1-ol	1119	0.02%	
25.158	allo-Ocimene	1123	0.01%	
25.973	trans-Sabinol	1134	0.01%	
26.170	trans-para-Menth-2-en-1-ol	1137	0.01%	
26.600	Isopulegol	1143	0.11%	
27.188	Menthone	1152	20.73%	
27.345	Unidentified	1154	0.02%	



Ret. Time	Component	Ret. Idx.	Conc. %	
27.641	Menthofuran	1158	1.67%	
27.753	Isomenthone	1160	3.72%	
28.101	Neomenthol	1165	3.51%	
28.257	Nonanol	1167	0.06%	
28.420	Unidentified	1169	0.03%	
28.470	trans-Isopulegone	1170	0.08%	
28.790	Menthol	1175	43.39%	
28.885	Terpinen-4-ol	1176	0.54%	
29.104	Unidentified	1179	0.07%	
29.315	Unidentified	1182	0.04%	
29.421	Neoisomenthol	1184	0.42%	
29.621	Isomenthol	1186	0.16%	
29.843	alpha-Terpineol	1190	0.4%	
30.055	Unidentified	1193	0.02%	
30.133	1,6-Dihydrocarveol	1194	0.06%	
31.229	Unidentified	1210	0.02%	
31.392	Unidentified	1212	0.01%	
31.805	Unidentified	1218	0.01%	
31.972	Unidentified	1220	0.01%	
32.628	cis-3-Hexenyl isovalerate	1230	0.02%	IFRA
32.780	Pulegone	1232	0.59%	
33.170	Carvone	1238	0.01%	IFRA
33.842	Piperitone	1248	0.75%	
35.030	Unidentified	1265	0.01%	
35.140	Neomenthyl acetate	1266	0.17%	
36.339	Menthyl acetate	1284	6.04%	
36.597	Unidentified	1288	0.03%	
37.365	Isomenthyl acetate	1299	0.11%	
37.556	Unidentified	1302	0.01%	
39.160	delta-Elemene	1326	0.05%	
41.624	Unidentified	1363	0.01%	
42.043	alpha-Copaene	1370	0.03%	
42.567	beta-Bourbonene	1377	0.18%	
42.780	alpha-Bourbonene	1381	0.01%	
42.928	beta-Elemene	1383	0.06%	
44.869	beta-Caryophyllene	1413	2.76%	
45.505	beta-Copaene	1423	0.04%	
46.415	Isogermacrene D	1438	0.02%	
46.826	trans-Murrola-3,5-diene	1444	0.06%	
46.931	trans-beta-Farnesene	1446	0.18%	



Ret. Time	Component	Ret. Idx.	Conc. %	
47.115	alpha-Humulene	1449	0.08%	
47.394	Alloaromodendrene	1453	0.01%	
47.940	beta-Cubebene	1462	0.02%	
48.323	gamma-Murolene	1468	0.05%	
48.704	Germacrene D	1474	1.07%	
48.930	Unidentified	1478	0.01%	
49.319	Viridiflorene	1484	0.02%	
49.596	Bicyclogermacrene	1488	0.17%	
49.801	alpha-Murolene	1491	0.11%	
50.660	gamma-Cadinene	1505	0.02%	
50.964	delta-Cadinene	1510	0.08%	
54.754	Caryophyllene oxide	1574	0.03%	
55.481	Viridiflorol	1586	0.15%	
58.949	epi-alpha-Murolol	1647	0.01%	

Total Identified Compounds **99.71 %**

