



Essential Oil University

GC/MS Report

Petitgrain (Bitter Orange) EO

Citrus aurantium

Item | Lot

2Y

Date | Analyst

1/14/2025

Dr. Robert S. Pappas

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The analysis of this batch sample, Petitgrain (Bitter Orange) EO, meets the expected chemical profile for authentic essential oil of *Citrus aurantium*. 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:** Petitgrain (Bitter Orange) EO**Botanical Name:** Citrus aurantium**Lot Number:** 2Y**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Italy**Analysis Date:** 1/14/2025**Manufacture Date:** April 2023

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

-3.52

1.45856

0.88986



Ret. Time	Component	Ret. Idx.	Conc. %	
2.954	Ethanol	541	0.05%	
11.819	Unidentified	923	0.01%	
12.220	alpha-Pinene	930	0.1%	
13.113	Unidentified	946	0.01%	
14.375	Sabinene	969	0.1%	
14.674	beta-Pinene	975	1%	
15.016	6-Methyl hept-5-en-2-one	981	0.02%	
15.312	Myrcene	986	2.46%	
16.362	alpha-Phellandrene	1005	0.04%	
16.509	delta-3-Carene	1007	0.44%	
17.022	alpha-Terpinene	1015	0.06%	
17.496	para-Cymene	1022	0.02%	
17.794	Limonene	1027	1.29%	IFRA
17.889	beta-Phellandrene	1028	0.05%	
17.958	1,8-Cineole	1029	0.06%	
18.190	cis-beta-Ocimene	1033	0.81%	
18.876	trans-beta-Ocimene	1043	2.32%	
19.663	gamma-Terpinene	1055	0.08%	
20.449	cis-Linalool oxide (furanoid)	1067	0.06%	
21.207	Isoterpinolene	1079	0.01%	
21.465	Terpinolene	1083	0.5%	
22.501	Linalool	1099	21.77%	IFRA
22.668	Unidentified	1101	0.02%	
23.374	Unidentified	1111	0.01%	
24.366	allo-Ocimene	1126	0.03%	
25.191	Unidentified	1138	0.01%	
27.960	Terpinen-4-ol	1178	0.1%	
28.989	alpha-Terpineol	1193	5.85%	
30.959	Nerol	1222	1.02%	
31.133	Unidentified	1224	0.01%	
31.896	Neral	1236	0.04%	IFRA
32.821	Linalyl acetate + Geraniol	1249	52.7%	
33.915	Geranial	1265	0.07%	IFRA
34.229	trans-Cinnamaldehyde	1270	0.02%	IFRA
34.518	Unidentified	1274	0.01%	
35.971	Unidentified	1295	0.01%	
36.694	Unidentified	1306	0.01%	
37.505	Unidentified	1319	0%	
38.169	Linalyl propionate	1329	0.04%	
38.429	Unidentified	1333	0%	



Ret. Time	Component	Ret. Idx.	Conc. %	
39.153	alpha-Terpinyl acetate	1344	0.11%	
39.368	Citronellyl acetate	1347	0.02%	IFRA
39.942	Neryl acetate	1356	2.81%	
41.230	Geranyl acetate	1375	4.98%	
41.957	Unidentified	1386	0.01%	
43.866	beta-Caryophyllene	1416	0.61%	
45.048	Unidentified	1435	0.01%	
46.108	alpha-Humulene	1452	0.06%	
48.329	Viridiflorene	1488	0.05%	
48.589	Bicyclogermacrene	1492	0.09%	
48.793	Unidentified	1495	0.01%	
49.970	delta-Cadinene	1515	0.02%	
52.504	trans-Nerolidol	1558	0.02%	

Total Identified Compounds **99.88 %**

