

## Sample Information

**Sample Name:** Lemon EO CP  
**Botanical Name:** Citrus limon  
**Lot Number:** ITP51-PK  
**Production Method:** Cold Press

**Sample Type:** EO - Single  
**Country of Origin:** Italy  
**Analysis Date:** 11/6/2024  
**Manufacture Date:** November 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	METHOD	RESULTS
Optical Rotation @20°C	USP[781]	+62.84
Refractive Index @20°C	USP[831]	1.47411
Specific Gravity @20°C	USP[841]	0.85310

Ret. Time	Component	Ret. Idx.	Conc. %	
6.957	Hexan-2-ol	809	0%	
11.511	Tricyclene	921	0.01%	
11.656	alpha-Thujene	924	0.25%	
12.057	alpha-Pinene	931	2.51%	
12.848	alpha-Fenchene	946	0.01%	
12.943	Camphene	947	0.07%	
14.195	Sabinene	971	2.2%	
14.506	beta-Pinene	976	13.95%	
14.838	Unidentified	982	0.01%	
14.980	para-Menth-3-ene	985	0.01%	
15.117	Myrcene	987	1.33%	
15.968	Octanal	1003	0.07%	
16.164	alpha-Phellandrene	1006	0.07%	
16.306	delta-3-Carene	1008	0.02%	
16.676	1,4-Cineole	1014	0.08%	
16.819	alpha-Terpinene	1016	0.24%	
17.303	para-Cymene	1023	0.56%	
17.675	Limonene	1029	64.75%	IFRA
17.741	beta-Phellandrene	1030	0.22%	
17.796	1,8-Cineole	1031	0.09%	
17.989	cis-beta-Ocimene	1034	0.03%	
18.665	trans-beta-Ocimene	1044	0.08%	
19.458	gamma-Terpinene	1056	8.14%	
20.227	trans-Sabinene hydrate	1068	0.03%	
21.230	Terpinolene	1084	0.64%	
21.449	Fenchone	1087	0.01%	
22.180	Linalool	1098	0.08%	IFRA
22.265	Unidentified	1100	0.01%	
22.545	Nonanal	1104	0.04%	
23.499	endo-Fenchol	1118	0.02%	
23.675	Unidentified	1120	0.01%	
24.429	cis-Limonene oxide	1131	0.04%	
24.638	Terpin-3-en-1-ol	1134	0.02%	
24.722	trans-Limonene oxide	1136	0.03%	
25.134	Unidentified	1141	0.04%	
25.566	cis-beta-Terpineol	1148	0.01%	
25.769	Citronellal	1151	0.03%	IFRA
27.702	Terpinen-4-ol	1179	0.06%	
28.713	alpha-Terpineol	1194	0.18%	
29.037	Unidentified	1198	0.02%	

Ret. Time	Component	Ret. Idx.	Conc. %	
29.507	Decanal	1205	0.02%	
30.334	trans-Carveol	1217	0%	
30.463	Unidentified	1219	0.01%	
30.698	Nerol	1223	0.02%	
30.860	Citronellol	1225	0.02%	IFRA
31.193	Unidentified	1230	0.02%	
31.632	Neral	1236	0.71%	IFRA
32.037	Carvone	1242	0.01%	IFRA
32.468	Geraniol	1249	0.03%	IFRA
33.650	Geranial	1266	1.14%	IFRA
34.188	Unidentified	1274	0.01%	
36.399	Unidentified	1307	0.01%	
39.103	Citronellyl acetate	1348	0.01%	IFRA
39.676	Neryl acetate	1357	0.44%	
40.953	Geranyl acetate	1376	0.49%	
43.188	cis-alpha-Bergamotene	1411	0.02%	
43.571	beta-Caryophyllene	1417	0.16%	
44.436	trans-alpha-Bergamotene	1431	0.27%	
44.635	Unidentified	1434	0.01%	
45.693	trans-beta-Farnesene	1451	0.02%	
45.807	alpha-Humulene	1453	0.01%	
47.599	trans-beta-Bergamotene	1482	0.02%	
48.111	Valencene	1490	0.02%	
48.290	Unidentified	1493	0.01%	
48.638	alpha-Bisabolene	1498	0.03%	
49.072	beta-Bisabolene	1506	0.51%	
53.122	Spathulenol	1574	0.02%	
53.414	Caryophyllene oxide	1579	0.01%	
57.899	Unidentified	1658	0.01%	
58.605	Unidentified	1670	0.01%	
59.446	alpha-Bisabolol	1685	0.01%	IFRA
74.017	Citropten	1968	0.01%	

Total Identified Compounds **99.88 %**

