

Sample & Analysis Information

Sample Information

Sample Name: Ginger Root Essential Oil**Botanical Name:** Zingiber officinale**Lot Number:** 13259**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** China**Analysis Date:** 5/1/2025**Manufacture Date:** May 2025

GC/MS

Inst. ID: Shimadzu GCMS-QP2010Ultra**Injection Type:** Split**Split Ratio:** 24.4**Column Type:** ZB-5**Injection Volume:** 0.1 μ L**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

-26.64

1.48805

0.87783

Ret. Time	Component	Ret. Idx.	Conc. %	
5.828	Toluene	763	0.03%	IFRA
6.621	Hexanal	800	0.29%	
9.842	2-Heptanone	886	0.09%	
10.360	2-Heptanol	900	0.06%	
11.491	Tricyclene	921	0.18%	
11.640	alpha-Thujene	923	0.04%	
12.040	alpha-Pinene	931	2.71%	
12.355	beta-Fenchene	937	0.01%	
12.832	alpha-Fenchene	945	0.07%	
12.934	Camphene	947	8.74%	
13.556	Verbenene	959	0.01%	
14.171	Sabinene	970	0.08%	
14.465	beta-Pinene	976	0.24%	
14.791	6-Methyl hept-5-en-2-one	982	0.58%	
15.093	Myrcene	987	0.73%	
15.942	Octanal	1002	0.14%	
16.137	alpha-Phellandrene	1005	0.84%	
16.278	delta-3-Carene	1007	0.03%	
16.791	alpha-Terpinene	1015	0.06%	
17.267	para-Cymene	1023	0.36%	
17.564	Limonene	1027	2.37%	IFRA
17.668	beta-Phellandrene	1029	4.88%	
17.738	1,8-Cineole	1030	2.5%	
18.123	2-Heptyl acetate	1036	0.01%	
18.639	trans-beta-Ocimene	1044	0.02%	
19.415	gamma-Terpinene	1056	0.06%	
21.197	Terpinolene	1083	0.22%	
21.544	2-Nonanone	1089	0.09%	
21.622	Rosefuran	1090	0.15%	
22.047	Unidentified	1096	0.08%	
22.148	Linalool	1098	0.23%	IFRA
22.287	2-Nonanol	1100	0.06%	
23.083	Unidentified	1112	0.06%	
23.464	endo-Fenchol	1117	0.01%	
23.826	cis-para-Menth-2-en-1-ol	1122	0.01%	
23.931	Unidentified	1124	0.03%	
25.366	Camphor	1145	0.07%	
25.735	Citronellal	1150	0.05%	IFRA
25.912	trans-beta-Terpineol	1153	0.05%	
26.483	Isoborneol analogue	1161	0.02%	

Ret. Time	Component	Ret. Idx.	Conc. %	
26.779	Unidentified	1165	0.01%	
26.909	Isoborneol	1167	0.13%	
27.071	Borneol	1170	0.84%	
27.674	Terpinen-4-ol	1178	0.1%	
28.106	Unidentified	1185	0.04%	
28.676	alpha-Terpineol	1193	0.45%	
29.467	Decanal	1205	0.17%	
29.829	Unidentified	1210	0.03%	
30.819	Citronellol	1225	0.11%	IFRA
30.945	Bornyl formate	1226	0.01%	
31.600	Neral	1236	0.1%	IFRA
32.324	Unidentified	1247	0.03%	
32.419	Geraniol	1248	0.13%	IFRA
32.656	Piperitone	1252	0.04%	
33.611	Geranial	1266	0.16%	IFRA
34.713	Bornyl acetate	1282	0.08%	
35.311	2-Undecanone	1291	0.3%	
36.002	Unidentified	1301	0.02%	
38.094	delta-Elemene	1333	0.1%	
38.866	alpha-Cubebene	1344	0.03%	
39.052	Citronellyl acetate	1347	0.05%	IFRA
40.246	Cyclosativene	1366	0.26%	
40.428	2-Butyl-2-octen-1-al	1368	0.18%	
40.731	alpha-Copaene	1373	0.46%	
40.910	Geranyl acetate	1376	0.21%	
41.150	Elemene isomer	1379	0.02%	
41.519	Unidentified	1385	0.05%	
41.629	beta-Elemene	1387	0.69%	
42.468	alpha-Funebrene	1399	0.23%	
43.465	beta-Ylangene	1415	0.03%	
43.510	beta-Caryophyllene	1416	0.07%	
44.151	gamma-Elemene	1426	0.41%	
44.386	trans-alpha-Bergamotene	1430	0.11%	
44.869	cis-beta-Farnesene	1438	0.02%	
45.273	Unidentified	1444	0.1%	
45.483	trans-Murrola-3,5-diene	1448	0.02%	
45.652	trans-beta-Farnesene	1450	0.47%	
45.762	Unidentified	1452	0.02%	
45.893	Unidentified	1454	0.01%	
46.037	Alloaromodendrene	1457	0.22%	

Ret. Time	Component	Ret. Idx.	Conc. %	
46.883	Unidentified	1470	0.15%	
46.991	gamma-Muurolene	1472	0.24%	
47.170	gamma-Curcumene	1475	0.25%	
47.388	Ar-Curcumene	1478	7.43%	
47.572	Aristolochene	1481	0.22%	
47.846	beta-Selinene	1486	0.13%	
48.026	Farnesene analogue	1489	0.12%	
48.045	Valencene	1489	0.08%	
48.307	alpha-Zingiberene	1493	30.65%	
48.466	gamma-Cadinene	1496	2.12%	
48.835	trans,trans-alpha-Farnesene	1502	3.88%	
49.043	beta-Bisabolene	1505	6.01%	
49.245	Unidentified	1509	0.35%	
49.454	Unidentified	1512	0.09%	
49.665	delta-Cadinene	1516	0.29%	
49.670	(-)-alpha-Panasinsen	1516	0.27%	
49.829	cis-Calamenene	1518	0.02%	
50.004	beta-Sesquiphellandrene	1521	10.74%	
50.154	trans-gamma-Bisabolene	1524	0.33%	
50.490	trans-Cadina-1,4-diene	1530	0.02%	
50.641	Unidentified	1532	0.02%	
50.740	alpha-Cadinene	1534	0.02%	
51.055	Unidentified	1539	0.14%	
51.237	Unidentified	1542	0.03%	
51.402	alpha-Elemol	1545	0.36%	
51.765	Unidentified	1551	0.15%	
52.015	Germacrene B	1555	0.19%	
52.169	trans-Nerolidol	1558	0.29%	
52.245	Unidentified	1559	0.03%	
52.643	Unidentified	1566	0.01%	
52.738	Unidentified	1568	0.04%	
52.926	Unidentified	1571	0.01%	
53.136	Unidentified	1574	0.03%	
53.874	Unidentified	1587	0.19%	
54.067	Unidentified	1590	0.03%	
54.264	Unidentified	1593	0.04%	
54.639	Unidentified	1600	0.04%	
55.265	Zingiberenol	1611	0.35%	
55.635	Unidentified	1617	0.04%	
55.698	10-epi-gamma-Eudesmol	1619	0.06%	

Ret. Time	Component	Ret. Idx.	Conc. %	
55.930	Unidentified	1623	0.03%	
56.035	Unidentified	1625	0.02%	
56.144	Unidentified	1626	0.15%	
56.237	Zingiberenol analogue	1628	0.24%	
56.619	Unidentified	1635	0.01%	
56.829	Unidentified	1639	0.01%	
56.943	Unidentified	1641	0.02%	
57.537	alpha-Eudesmol	1651	0.28%	
57.730	Unidentified	1655	0.11%	
58.064	Intermedeol	1661	0.04%	
58.404	beta-Bisabolol	1667	0.07%	
58.465	7-epi-cis-Sesquibabinene hydrate	1668	0.02%	
58.656	Unidentified	1671	0.03%	
59.310	Unidentified	1683	0.19%	
59.375	alpha-Bisabolol	1684	0.07%	IFRA
59.485	Unidentified	1686	0.03%	
59.770	Unidentified	1691	0.12%	
62.085	Unidentified	1734	0.05%	
62.477	Unidentified	1741	0.01%	
63.397	Unidentified	1758	0.02%	
64.000	Unidentified	1770	0.02%	
65.766	Unidentified	1803	0.02%	
68.646	Unidentified	1859	0.02%	
68.855	Geranyl terpinene analogue	1864	0.04%	
70.430	Unidentified	1895	0.01%	
71.653	Geranyl terpinene analogue	1919	0.01%	
72.975	Geranyl-para-cymene	1947	0.05%	
74.273	Geranyl-alpha-terpinene	1973	0.03%	

Total Identified Compounds **97.21 %**

