



Essential Oil University

GC/MS Report

Item	Lot
Pine Needle (Scots Pine) EO <i>Pinus sylvestris</i>	7K
Date	Analyst
2/11/2025	Dr. Robert S. Pappas

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The analysis of this batch sample, Pine Needle (Scots Pine) EO, meets the expected chemical profile for authentic essential oil of *Pinus sylvestris*. 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:** Pine Needle (Scots Pine) EO**Botanical Name:** Pinus sylvestris**Lot Number:** 7K**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Bulgaria**Analysis Date:** 2/11/2025**Manufacture Date:** July 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

-22.48

1.47380

0.87347



Ret. Time	Component	Ret. Idx.	Conc. %	
5.826	Toluene	763	0.02%	IFRA
7.809	6,6-Dimethylhepta-2,4-diene	832	0.01%	
9.589	Unidentified	879	0.02%	
11.379	Hashishene	919	0.01%	
11.497	Tricyclene	921	0.22%	
11.647	alpha-Thujene	924	0.23%	
12.089	alpha-Pinene	932	36.6%	
12.837	alpha-Fenchene	946	0.03%	
12.931	Camphene	947	1.45%	
13.128	Thuja-2,4(10)diene	951	0.25%	
14.183	Sabinene	970	1.4%	
14.514	beta-Pinene	976	26.1%	
15.102	Myrcene	987	1.18%	
16.072	Unidentified	1004	0.04%	
16.153	alpha-Phellandrene	1006	0.08%	
16.317	delta-3-Carene	1008	15.41%	
16.660	1,4-Cineole	1013	0.04%	
16.797	alpha-Terpinene	1015	0.14%	
16.963	ortho-Cymene	1018	0.01%	
17.275	para-Cymene	1023	0.29%	
17.575	Limonene	1027	3.45%	IFRA
17.674	beta-Phellandrene	1029	0.33%	
17.746	1,8-Cineole	1030	0.2%	
17.900	Unidentified	1032	0.02%	
17.975	cis-beta-Ocimene	1034	0.02%	
19.420	gamma-Terpinene	1056	0.18%	
20.191	trans-Sabinene hydrate	1068	0.04%	
20.328	Pinol	1070	0.01%	
21.206	Terpinolene	1083	0.41%	
21.320	Unidentified	1085	0.01%	
21.528	para-Cymenene	1088	0.07%	
22.115	alpha-Pinene oxide	1097	0.03%	
22.219	Undecane	1099	0.07%	
22.796	Thujol	1107	0.03%	
23.470	endo-Fenchol	1117	0.02%	
23.642	trans-para-Mentha-2,8-dienol	1120	0.02%	
23.825	Unidentified	1122	0.01%	
23.998	alpha-Campholenal	1125	0.13%	
24.776	Nopinone	1136	0.05%	
24.934	trans-Pinocarveol	1139	0.7%	



Ret. Time	Component	Ret. Idx.	Conc. %	
25.015	cis-Verbenol	1140	0.03%	
25.065	Epoxyterpinolene	1140	0.02%	
25.260	trans-Verbenol	1143	0.28%	
25.345	Camphor	1145	0.02%	
25.605	alpha-Phellandrene-8-ol	1148	0.05%	
25.923	Unidentified	1153	0.01%	
26.066	Unidentified	1155	0.04%	
26.292	trans-Pinocamphone	1158	0.05%	
26.414	Pinocarvone	1160	0.05%	
27.067	Unidentified	1170	0.09%	
27.363	Isopinocamphone	1174	0.02%	
27.545	Unidentified	1177	0.02%	
27.680	Terpinen-4-ol	1179	0.26%	
27.925	Unidentified	1182	0.01%	
28.115	para-Cymen-8-ol	1185	0.09%	
28.208	cis-Pinocarveol	1186	0.05%	
28.687	alpha-Terpineol	1193	1.83%	
28.900	Unidentified	1196	0.02%	
29.016	Unidentified	1198	0.02%	
29.478	Verbenone	1205	0.06%	
29.605	Unidentified	1207	0.02%	
30.300	trans-Carveol	1217	0.06%	
31.022	Thymol methyl ether	1227	0.02%	
31.205	cis-Carveol	1230	0.02%	
31.656	Unidentified	1237	0.01%	
31.788	Carvone	1239	0.03%	IFRA
32.000	Carvone isomer	1242	0.02%	
32.347	Unidentified	1247	0.01%	
32.496	Myrtenyl acetate	1249	0.02%	
34.146	Perillaldehyde	1273	0.01%	IFRA
34.727	Bornyl acetate	1282	1.39%	
34.877	Isobornyl acetate	1284	0.02%	
35.390	Unidentified	1292	0.01%	
35.485	trans-Pinocarvyl acetate	1293	0.02%	
38.409	Methyl anthranilate	1337	0.01%	
38.847	alpha-Terpinyol acetate	1344	0.03%	
39.066	alpha-Longipinene	1348	0.44%	
40.327	Isolodene	1367	0.03%	
40.633	Longicyclene	1371	0.03%	
40.754	alpha-Ylangene	1373	0.02%	



Ret. Time	Component	Ret. Idx.	Conc. %	
41.263	beta-Bourbonene	1381	0.04%	
41.778	Sativene	1389	0.03%	
42.339	Alloaromodendrene	1397	0.02%	
42.589	Unidentified	1401	0.01%	
42.890	Junipene	1406	1.1%	
43.541	beta-Caryophyllene	1417	2.78%	
44.824	Unidentified	1437	0.01%	
45.655	Unidentified	1451	0.01%	
45.776	alpha-Humulene	1452	0.07%	
47.006	trans-Cadina-1(6),4-diene	1472	0.01%	
47.369	Germacrene D	1478	0.03%	
48.463	alpha-Murolene	1496	0.01%	
49.041	beta-Bisabolene	1505	0.04%	
49.331	gamma-Cadinene	1510	0.03%	
49.642	delta-Cadinene	1515	1.13%	
53.385	Caryophyllene oxide	1579	0.1%	
54.571	Longiborneol	1599	0.01%	
55.006	Humulene epoxide II	1606	0.01%	
76.011	Unidentified	2010	0.04%	

Total Identified Compounds **99.62 %**

