



Essential Oil University

GC/MS Report

Item	Lot
Douglas Fir EO Needle <i>Pseudotsuga menziesii</i>	9E
Date	Analyst
10/14/2025	Dr. Robert S. Pappas

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The analysis of this batch sample, Douglas Fir EO Needle, meets the expected chemical profile for authentic essential oil of *Pseudotsuga menziesii*. 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:** Douglas Fir EO Needle**Botanical Name:** *Pseudotsuga menziesii***Lot Number:** 9E**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Canada**Analysis Date:** 10/14/2025**Manufacture Date:** August 2025

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

-17.96

1.47527

0.86790



Ret. Time	Component	Ret. Idx.	Conc. %	
3.745	4-Methylcyclopentene	652	0.01%	
6.137	Toluene	755	0%	
8.667	Ethyl 2-methylbutyrate	837	0.01%	
9.479	1-Isopropyl-3-methylcyclopentane	857	0%	
10.103	Santene	872	0.02%	
11.984	Hashishene	913	0%	
12.107	Tricyclene	915	0.13%	
12.257	alpha-Thujene	918	0.81%	
12.696	alpha-Pinene	926	12.5%	ALLERGEN
13.493	alpha-Fenchene	940	0.04%	
13.592	Camphene	941	1.21%	
13.790	Thuja-2,4(10)diene	945	0.02%	
14.894	Sabinene	964	9.24%	
15.249	beta-Pinene	971	28.96%	ALLERGEN
15.687	Unidentified	978	0.01%	
15.809	Myrcene	980	2.05%	PROP. 65
16.361	Ethyl hexanoate	990	0.07%	
16.734	Pseudolimonene	997	0.03%	
16.883	alpha-Phellandrene	999	0.34%	
17.036	delta-3-Carene	1002	4.48%	
17.411	1,4-Cineole	1007	0.09%	
17.547	alpha-Terpinene	1009	2.71%	ALLERGEN
17.701	ortho-Cymene	1012	0.01%	
18.025	para-Cymene	1017	0.75%	
18.338	Limonene	1021	2.93%	ALLERGEN IFRA
18.441	beta-Phellandrene	1023	1.44%	
18.525	1,8-Cineole	1024	0.05%	
18.726	cis-beta-Ocimene	1027	0.24%	
19.418	trans-beta-Ocimene	1037	0.2%	
19.851	Unidentified	1044	0.03%	
20.229	gamma-Terpinene	1050	4.85%	
20.789	Unidentified	1058	0.01%	
21.012	trans-Sabinene hydrate	1061	0.02%	
21.774	Unidentified	1073	0.01%	
22.083	Terpinolene	1077	14.34%	ALLERGEN
22.352	para-Cymenene	1082	0.16%	
22.983	Linalool	1091	0.08%	ALLERGEN IFRA
23.090	Unidentified	1093	0.01%	
23.178	Unidentified	1094	0.01%	
23.913	trans-4,8-Dimethyl-nona-1,3,7-triene	1105	0.07%	



Ret. Time	Component	Ret. Idx.	Conc. %	
24.331	endo-Fenchol	1111	0.06%	
24.629	Unidentified	1115	0.04%	
24.689	cis-para-Menth-2-en-1-ol	1116	0.06%	
24.850	Unidentified	1118	0.01%	
24.937	Unidentified	1119	0.02%	
25.394	Unidentified	1126	0.02%	
25.480	Terpin-3-en-1-ol	1127	0.02%	
25.804	Unidentified	1132	0.04%	
25.954	Epoxyterpinolene	1134	0.1%	
26.367	Isopulegol	1140	0.02%	
26.599	Citronellal	1143	0.14%	IFRA
26.822	Unidentified	1146	0.02%	
27.061	Isoisopulegol	1150	0.01%	
27.314	Pinocarvone	1153	0.01%	
27.980	Borneol	1163	0.05%	
28.267	Unidentified	1167	0.02%	
28.451	Unidentified	1170	0.02%	
28.605	Terpinen-4-ol	1172	4.27%	
28.997	para-Cymen-8-ol	1178	0.06%	
29.370	Unidentified	1183	0.01%	
29.586	alpha-Terpineol	1186	0.7%	ALLERGEN
29.687	Ethyl octanoate	1187	0.12%	
29.931	gamma-Terpineol	1191	0.01%	ALLERGEN
30.550	trans-Piperitol	1200	0.02%	
31.727	Citronellol	1217	0.81%	ALLERGEN IFRA
31.937	Thymol methyl ether	1220	0.04%	
32.463	Unidentified	1228	0.03%	
33.338	Unidentified	1240	0.05%	
33.615	Unidentified	1244	0.03%	
34.788	beta-Terpinyol acetate	1261	0.02%	
34.931	Citronellyl formate	1263	0.05%	
35.328	Unidentified	1269	0.01%	
35.694	Bornyl acetate	1274	0.63%	
35.811	trans-Anethole	1276	0.03%	ALLERGEN
36.156	Unidentified	1281	0.01%	
36.448	trans-Pinocarvyl acetate	1285	0.01%	
37.288	Unidentified	1298	0.01%	
38.338	Methyl decanoate	1313	0.09%	
39.113	delta-Elementene	1325	0.03%	
40.029	Citronellyl acetate	1339	1.92%	IFRA



Ret. Time	Component	Ret. Idx.	Conc. %	
40.609	Neryl acetate	1348	0.01%	
41.892	Geranyl acetate	1367	1.39%	ALLERGEN
42.663	beta-Elemene	1379	0.04%	
43.029	Ethyl decanoate	1384	0.08%	
43.544	Sibirene	1392	0.01%	
43.953	Longifolene	1398	0.02%	IFRA
44.591	beta-Caryophyllene	1409	0.05%	ALLERGEN
45.439	trans-alpha-Bergamotene	1422	0.01%	
46.844	alpha-Humulene	1444	0.11%	
47.866	cis-Cadina-1(6),4-diene	1461	0.01%	
48.046	trans-Cadina-1(6),4-diene	1464	0.01%	
48.315	alpha-Amorphene	1468	0.03%	
48.432	Germacrene D	1470	0.04%	
48.807	delta-Selinene	1476	0.02%	
48.926	beta-Selinene	1478	0.02%	
49.115	Unidentified	1481	0.01%	
49.239	Unidentified	1482	0.02%	
49.364	alpha-Selinene	1484	0.02%	
49.512	alpha-Murolene	1487	0.02%	
49.790	Unidentified	1491	0.02%	
49.862	trans,trans-alpha-Farnesene	1492	0.04%	
50.390	Unidentified	1501	0.01%	
50.697	delta-Cadinene	1506	0.11%	
51.013	Unidentified	1511	0.01%	
51.543	Unidentified	1520	0.02%	
52.035	trans-alpha-Bisabolene	1528	0.02%	
52.461	Unidentified	1536	0.01%	
53.116	Germacrene B	1547	0.01%	
53.230	trans-Nerolidol	1548	0.01%	
54.479	Unidentified	1569	0.01%	
56.099	Unidentified	1597	0.01%	
56.860	Selina-6-en-4-ol	1610	0.07%	
57.122	Unidentified	1615	0.06%	
57.927	Unidentified	1629	0.02%	
58.047	Unidentified	1631	0.03%	
58.672	Cadin-4-en-10-ol	1642	0.06%	
61.974	Unidentified	1700	0.01%	

Total Identified Compounds **99.35 %**



TIC
26,319,625

