



Essential Oil University

GC/MS Report

Item	Lot
Fir Needle EO Balsam, Pure & Natural <i>Abies balsamea</i>	0P
Date	Analyst
9/2/2025	Dr. Robert S. Pappas

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The analysis of this batch sample, Fir Needle EO Balsam, Pure & Natural, meets the expected chemical profile for authentic essential oil of *Abies balsamea*. 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:** Fir Needle EO Balsam, Pure & Natural**Botanical Name:** Abies balsamea**Lot Number:** 0P**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Canada**Analysis Date:** 9/2/2025**Manufacture Date:** January 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

-23.03

1.47440

0.87190



Ret. Time	Component	Ret. Idx.	Conc. %	
4.203	3-Methylbutanal	672	0%	
6.204	Toluene	758	0.01%	IFRA
6.856	1-Methoxyhexane	786	0.01%	
10.232	Santene	875	1.1%	
11.290	Unidentified	901	0.02%	
12.260	Tricyclene	918	0.69%	
12.410	alpha-Thujene	921	0.16%	
12.853	alpha-Pinene	928	17.72%	
13.661	alpha-Fenchene	943	0.07%	
13.763	Camphene	944	4.63%	
13.957	Thuja-2,4(10)diene	948	0.05%	
14.961	Cymene isomer	966	0.03%	
15.049	Sabinene	967	0.09%	
15.408	beta-Pinene	973	31.13%	
15.986	Myrcene	984	2.41%	
16.925	Pseudolimonene	1000	0.01%	
16.982	Unidentified	1001	0.01%	
17.072	alpha-Phellandrene	1002	0.18%	
17.234	delta-3-Carene	1005	10.5%	
17.736	alpha-Terpinene	1012	0.18%	
18.219	para-Cymene	1019	0.22%	
18.554	Limonene	1024	13.23%	IFRA
18.656	beta-Phellandrene	1026	5.51%	
18.735	1,8-Cineole	1027	0.04%	
18.917	Unidentified	1030	0.02%	
20.419	gamma-Terpinene	1053	0.3%	
21.974	Isoterpinolene	1076	0.03%	
22.244	Terpinolene	1080	1.04%	
22.472	Fenchone	1083	0.14%	
22.550	para-Cymenene	1084	0.07%	
23.004	Campholenal isomer	1091	0.02%	
23.189	Linalool	1094	0.09%	IFRA
23.687	alpha-Thujone	1102	0.02%	IFRA
24.552	endo-Fenchol	1114	0.09%	
24.917	Unidentified	1119	0.01%	
25.071	alpha-Campholenal	1121	0.01%	
25.324	Unidentified	1125	0.01%	
25.891	Nopinone	1133	0.01%	
26.046	trans-Pinocarveol	1135	0.07%	
26.488	Camphor	1142	0.19%	



Ret. Time	Component	Ret. Idx.	Conc. %	
26.711	alpha-Phellandrene-8-ol	1145	0.01%	
27.053	trans-beta-Terpineol	1150	0.06%	
27.413	trans-Pinocamphone	1155	0.02%	
27.539	Pinocarvone	1157	0.02%	
27.640	Isoborneol	1158	0.01%	
28.214	Borneol	1166	0.76%	
28.500	Isopinocamphone	1170	0.05%	
28.813	Terpinen-4-ol	1175	0.24%	
29.225	Cryptone	1181	0.03%	
29.813	alpha-Terpineol	1189	0.89%	
30.012	Estragole	1192	0.03%	IFRA
30.630	Verbenone	1201	0.02%	
30.761	Unidentified	1203	0.01%	
31.380	endo-Fenchyl acetate	1212	0.05%	
31.950	Citronellol	1220	0%	
32.162	Thymol methyl ether	1223	0.05%	
33.151	Carvone	1238	0.01%	IFRA
33.831	Piperitone	1247	0.05%	
35.018	Isopulegyl acetate	1265	0.01%	
35.470	Phellandral	1271	0.01%	
35.651	Unidentified	1274	0.01%	
35.949	Bornyl acetate	1278	5.9%	
36.105	Isobornyl acetate	1280	0.02%	
36.248	Thymol	1283	0.01%	
36.495	2-Undecanone	1286	0.01%	
36.674	Methyl myrtenate	1289	0.01%	
39.810	Unidentified	1336	0.01%	
40.295	Citronellyl acetate	1343	0.02%	IFRA
40.348	alpha-Longipinene	1344	0.1%	
41.614	Isoledene	1363	0.03%	
41.942	Longicyclene	1368	0.02%	
42.020	alpha-Ylangene	1369	0.01%	
42.140	Geranyl acetate	1371	0.01%	
43.082	Sativene	1385	0.03%	
43.651	Unidentified	1394	0.02%	
43.792	Sibirene	1396	0.02%	
44.215	Junipene	1403	0.48%	
44.846	beta-Caryophyllene	1413	0.14%	
45.691	trans-alpha-Bergamotene	1426	0.01%	
46.774	alpha-Himachalene	1443	0%	



Ret. Time	Component	Ret. Idx.	Conc. %	
46.916	trans-beta-Farnesene	1446	0.01%	
47.101	alpha-Humulene	1448	0.06%	
48.565	Unidentified	1472	0.01%	
48.688	Germacrene D	1474	0.01%	
48.851	gamma-Himachalene	1476	0.05%	
49.188	beta-Selinene	1482	0.02%	
49.396	Valencene	1485	0.07%	
49.619	alpha-Selinene	1489	0.01%	
49.763	alpha-Murolene	1491	0.01%	
49.874	beta-Himachalene	1493	0.04%	
50.034	Cadinene analogue	1495	0.01%	
50.334	beta-Bisabolene	1500	0.32%	
50.644	gamma-Cadinene	1505	0.01%	
50.950	delta-Cadinene	1510	0.04%	
52.288	trans-alpha-Bisabolene	1533	0.04%	
53.475	trans-Nerolidol	1553	0.01%	

Total Identified Compounds **99.9 %**



TIC
30,457,591

