

Sample Information

Sample Name: Spruce EO Black
Botanical Name: Picea mariana
Lot Number: CAP30-PK
Production Method: Steam distilled

Sample Type: EO - Single
Country of Origin: Canada
Analysis Date: 9/11/2024
Manufacture Date: September 2024

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	METHOD	RESULTS
Optical Rotation @20°C	USP[781]	-26.32
Refractive Index @20°C	USP[831]	1.46995
Specific Gravity @20°C	USP[841]	0.90002

GC/MS Report
Components

Ret. Time	Component	Ret. Idx.	Conc. %	
9.750	Santene	879	1.11%	
10.755	Unidentified	904	0.06%	
11.040	Unidentified	909	0.01%	
11.692	Tricyclene	921	1.61%	
11.844	alpha-Thujene	923	0.13%	
12.274	alpha-Pinene	931	19.29%	
12.567	Unidentified	937	0.03%	
13.051	alpha-Fenchene	945	0.16%	
13.156	Camphene	947	11.39%	
13.342	Thuja-2,4(10)-diene	951	0.02%	
14.323	Cymene analogue	968	0.03%	
14.405	Sabinene	970	0.06%	
14.719	beta-Pinene	976	10.45%	
15.337	Myrcene	987	1.88%	
15.963	Unidentified	998	0.01%	
16.392	alpha-Phellandrene	1005	0.23%	
16.558	delta-3-Carene	1008	10.06%	
16.906	1,4-Cineole	1013	0.02%	
17.050	alpha-Terpinene	1015	0.37%	
17.528	para-Cymene	1023	0.27%	
17.834	Limonene	1027	6.7%	IFRA
17.926	beta-Phellandrene	1029	0.64%	
17.991	1,8-Cineole	1030	0.18%	
18.232	cis-beta-Ocimene	1033	0.01%	
18.933	trans-beta-Ocimene	1044	0.02%	
19.690	gamma-Terpinene	1056	0.22%	
20.595	Pinol	1070	0.03%	
21.227	Unidentified	1079	0.03%	
21.499	Terpinolene	1083	1.18%	
21.699	Unidentified	1086	0.02%	
21.814	para-Cymenene	1088	0.12%	
22.204	alpha-Campholenal	1094	0.04%	
22.440	Linalool	1098	0.23%	IFRA
23.758	endo-Fenchol	1117	0.06%	
24.293	Unidentified	1125	0.05%	
25.236	trans-Pinocarveol	1138	0.05%	
25.662	Camphor	1145	0.05%	
26.215	trans-beta-Terpineol	1153	0.07%	
26.595	Unidentified	1158	0.01%	
26.788	Isoborneol	1161	0.08%	

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Ret. Time	Component	Ret. Idx.	Conc. %	
27.379	Borneol	1170	0.93%	
27.673	Unidentified	1174	0.01%	
27.987	Terpinen-4-ol	1178	0.2%	
28.426	Unidentified	1185	0.01%	
28.532	Unidentified	1186	0.02%	
28.991	alpha-Terpineol	1193	1.03%	
29.529	Unidentified	1201	0.01%	
29.919	Unidentified	1207	0.01%	
30.528	endo-Fenchyl acetate	1215	0.16%	
31.154	Unidentified	1225	0.01%	
31.348	Thymol methyl ether	1227	0.02%	
34.565	Unidentified	1275	0.05%	
34.833	Unidentified	1279	0.08%	
35.119	Bornyl acetate	1283	27.59%	
35.244	Isobornyl acetate	1285	0.83%	
35.713	Unidentified	1292	0.05%	
35.808	trans-Pinocarvyl acetate	1293	0.04%	
38.271	Unidentified	1330	0.03%	
38.919	Unidentified	1340	0.01%	
39.188	alpha-Terpinyl acetate	1344	0.03%	
39.401	Citronellyl acetate	1347	0.04%	IFRA
41.096	Unidentified	1373	0.01%	
41.253	Geranyl acetate	1376	0.2%	
42.002	Unidentified	1387	0.02%	
43.252	Junipene	1406	0.06%	
43.897	beta-Caryophyllene	1417	0.08%	
46.149	Unidentified	1453	0.02%	
47.182	cis-Cadina-1(6),4-diene	1469	0.03%	
47.362	trans-Cadina-1(6),4-diene	1472	0.05%	
47.745	Germacrene D	1478	0.01%	
48.401	Unidentified	1489	0.01%	
48.688	Unidentified	1494	0.02%	
48.827	alpha-Muurolene	1496	0.13%	
49.701	gamma-Cadinene	1510	0.15%	
50.012	delta-Cadinene	1516	0.59%	
50.197	Unidentified	1519	0.03%	
50.292	Unidentified	1520	0.03%	
50.858	Unidentified	1530	0.02%	
51.106	alpha-Cadinene	1534	0.03%	
51.346	trans-alpha-Bisabolene	1538	0.07%	

Ret. Time	Component	Ret. Idx.	Conc. %
56.418	Unidentified	1625	0.01%
57.218	tau-Cadinol	1639	0.07%
57.324	epi-alpha-Muurolol	1641	0.06%
57.471	Unidentified	1644	0.02%
57.969	alpha-Cadinol	1652	0.13%
103.695	Unidentified	2670	0.01%

Total Identified Compounds **99.29 %**

GC/MS Report: Chromatogram

