



# Essential Oil University

## GC/MS Report

Item	Lot
Pine Needle (Scots Pine) EO	8A
<i>Pinus sylvestris</i>	
Date	Analyst
12/15/2025	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:** 8A  
**Production Method:** Steam distilled

**Sample Type:** EO - Single  
**Country of Origin:** Bulgaria  
**Analysis Date:** 12/15/2025  
**Manufacture Date:** December 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	METHOD	RESULTS
Optical Rotation @20°C	USP[781]	-13.00
Refractive Index @20°C	USP[831]	1.47186
Specific Gravity @20°C	USP[841]	0.86798



Ret. Time	Component	Ret. Idx.	Conc. %	
10.013	Santene	870	0.23%	
11.321	Unidentified	902	0.04%	
11.859	Hashishene	911	0.01%	
11.980	Tricyclene	913	0.55%	
12.130	alpha-Thujene	916	0.14%	
12.553	alpha-Pinene	923	45.21%	ALLERGEN
12.862	alpha-Fenchene isomer	929	0.01%	
13.342	alpha-Fenchene	937	0.06%	
13.436	Camphene	939	3.6%	
13.638	Thuja-2,4(10)diene	942	0.02%	
14.620	Cymene analogue	960	0.02%	
14.703	Sabinene	961	0.29%	
15.007	beta-Pinene	966	12.26%	ALLERGEN
15.504	para-Menth-3-ene	975	0.01%	
15.631	Myrcene	977	1.1%	PROP. 65
16.256	alpha-Terpinene	988	0.03%	ALLERGEN
16.323	Unidentified	989	0.01%	
16.430	Unidentified	991	0.03%	
16.551	Pseudolimonene	993	0.06%	
16.692	alpha-Phellandrene	996	0.12%	
16.854	delta-3-Carene	999	22.26%	
17.218	1,4-Cineole	1004	0.03%	
17.353	alpha-Terpinene	1006	0.4%	ALLERGEN
17.501	ortho-Cymene	1009	0.01%	
17.827	para-Cymene	1014	0.38%	
18.125	Limonene	1018	2.28%	ALLERGEN IFRA
18.225	beta-Phellandrene	1020	0.59%	
18.318	1,8-Cineole	1021	0.04%	
18.517	cis-beta-Ocimene	1024	0.01%	
19.205	trans-beta-Ocimene	1034	0.01%	
19.993	gamma-Terpinene	1046	0.05%	
21.800	Terpinolene	1073	2.68%	ALLERGEN
22.100	para-Cymenene	1078	0.02%	
22.709	alpha-Pinene oxide	1087	0.02%	
23.390	Unidentified	1097	0.02%	
25.679	Epoxyterpinolene	1130	0.01%	
25.871	Unidentified	1133	0.01%	
25.986	Camphor	1134	0.02%	ALLERGEN
27.682	Borneol	1159	0.16%	
29.290	alpha-Terpineol	1182	0.08%	ALLERGEN

Ret. Time	Component	Ret. Idx.	Conc. %	
31.439	Unidentified	1213	0.01%	
31.651	Thymol methyl ether	1216	0.01%	
35.379	Bornyl acetate	1270	2.88%	
35.523	Isobornyl acetate	1272	0.01%	
41.448	alpha-Copaene	1361	0.01%	
41.570	Geranyl acetate	1362	0.01%	ALLERGEN
43.603	Junipene	1393	0.06%	
44.248	beta-Caryophyllene	1403	2.91%	ALLERGEN
46.487	alpha-Humulene	1439	0.07%	
48.075	Germacrene D	1464	0.88%	
49.736	beta-Bisabolene	1490	0.01%	
50.348	delta-Cadinene	1500	0.26%	

Total Identified Compounds **99.88 %**



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16,426,388

