Essential Oil University

GC/MS Report

Item	Lot
Helichrysum italicum (Immortelle) EO *Helichrysum italicum*	**4E**
Date	**Analyst**
11/20/2025	**Dr. Robert S. Pappas**

© Copyright 2025 by Essential Oil University. All rights reserved. Any publishing, copying, use, dissemination, or distribution of this report, including online, without the express written permission of Essential Oil University is strictly prohibited.

The analysis of this batch sample, Helichrysum italicum (Immortelle) EO, meets the expected chemical profile for authentic essential oil of *Helichrysum italicum*. 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: Helichrysum italicum (Immortelle) EO
Botanical Name: Helichrysum italicum
Lot Number: 4E
Production Method: Steam distilled
Sample Type: EO - Single
Country of Origin: Greece
Analysis Date: 11/20/2025
Manufacture Date: November 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]	-2.32
Refractive Index @20°C	USP[831]	1.47678
Specific Gravity @20°C	USP[841]	0.89919

Ret. Time	Component	Ret. Idx.	Conc. %	
4.761	Unidentified	698	0.02%	
5.729	2-Methyl-3-pentanone	741	0.04%	
6.509	Unidentified	775	0.01%	
7.061	2-Methyl-2-heptene	799	0.1%	
8.379	4-Methyl-3-hexanone	832	0.1%	
10.993	Nonane	898	0.02%	
11.301	Bornylene	904	0.02%	
12.813	alpha-Pinene	930	11.92%	ALLERGEN
13.632	alpha-Fenchene	945	0.18%	
13.733	Camphene	947	0.1%	
13.930	Thuja-2,4(10)-diene	950	0.01%	
15.333	beta-Pinene	975	0.25%	ALLERGEN
15.960	Myrcene	986	0.07%	PROP. 65
16.005	Unidentified	987	0.02%	
16.741	Isobutyl 2-methylbutyrate	1000	0.03%	
17.049	alpha-Phellandrene	1004	0.02%	
17.706	alpha-Terpinene	1014	0.11%	ALLERGEN
18.190	para-Cymene	1022	0.2%	
18.492	Limonene	1026	1.86%	ALLERGEN IFRA
18.605	beta-Phellandrene	1028	0.02%	
18.696	1,8-Cineole	1029	0.33%	
18.883	cis-beta-Ocimene	1032	0.01%	
19.585	trans-beta-Ocimene	1043	0.04%	
19.788	Isobutyl angelate	1046	0.21%	
20.397	gamma-Terpinene	1055	0.26%	
22.229	Terpinolene	1082	0.13%	ALLERGEN
22.567	2-Nonanone	1087	0.04%	
22.650	2,4-Dimethylheptane-3,5-dione	1089	0.03%	
23.179	Linalool	1097	0.64%	ALLERGEN IFRA
23.412	2-Methylbutyl-2-methylbutyrate	1100	0.09%	
23.551	Nonanal	1102	0.05%	
24.558	endo-Fenchol	1117	0.05%	
26.053	trans-Pinocarveol	1138	0.05%	
26.465	Isoamyl angelate	1144	0.02%	
26.722	Isoamyl tiglate	1148	0.82%	
27.063	trans-beta-Terpineol	1153	0.02%	ALLERGEN
27.521	Unidentified	1159	0.02%	
27.606	Unidentified	1160	0.03%	
28.222	Borneol	1169	0.06%	
28.816	Terpinen-4-ol	1178	0.41%	

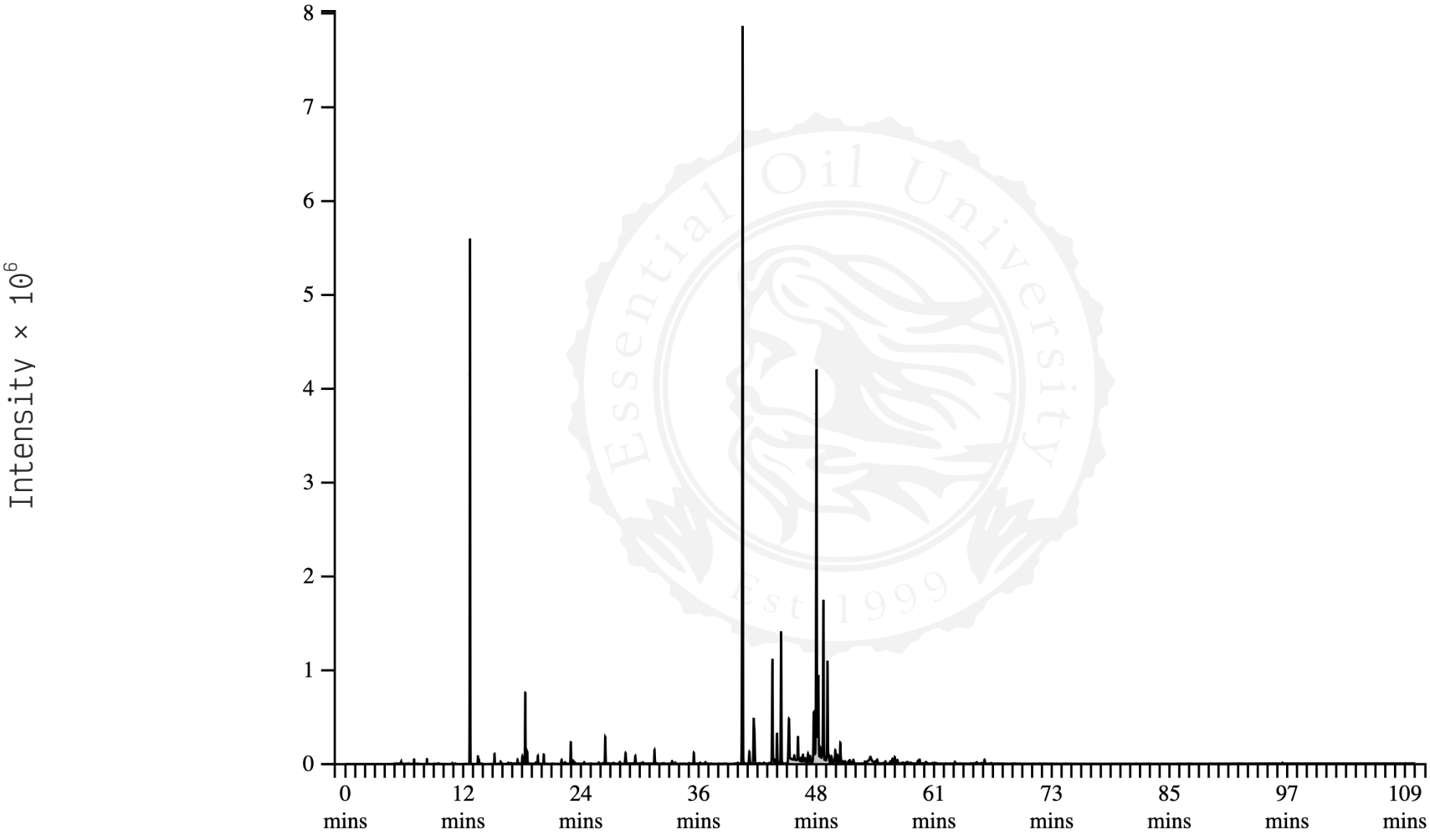
Ret. Time	Component	Ret. Idx.	Conc. %	
29.819	alpha-Terpineol	1192	0.26%	ALLERGEN
30.590	Decanal	1203	0.03%	
31.788	Nerol	1221	0.42%	
31.970	Unidentified	1223	0.02%	
32.599	Unidentified	1233	0.02%	
32.773	Pulegone	1235	0.02%	PROP. 65
33.600	Unidentified	1247	0.09%	
33.827	Unidentified	1251	0.01%	
33.926	Unidentified	1252	0.04%	
35.368	Unidentified	1273	0.03%	
35.842	Hexyl angelate	1280	0.34%	
36.485	2-Undecanone	1289	0.03%	
37.033	Tridecane	1297	0.06%	
40.351	Eugenol	1348	0.03%	ALLERGEN IFRA
40.863	Neryl acetate	1355	25.6%	
41.551	Cyclosativene	1366	0.47%	
42.003	alpha-Copaene	1373	1.39%	
42.035	Isoitalicene	1373	1.16%	
43.050	Sativene	1389	0.04%	
43.610	Tetradecane	1397	0.02%	
43.919	Italicene	1402	3.54%	
44.015	Italicene isomer	1403	0.12%	
44.168	Italicene isomer	1406	0.14%	
44.391	cis-alpha-Bergamotene	1409	1.01%	
44.606	alpha-Cedrene	1413	0.02%	IFRA
44.818	beta-Caryophyllene	1416	4.42%	ALLERGEN
45.627	4,6,9-Trimethyl-dec-8-en-3,5-dione	1429	1.36%	
45.640	trans-alpha-Bergamotene	1429	0.69%	
46.171	6,9-Guaiadiene	1438	0.15%	
46.551	Neryl propionate	1444	0.85%	
46.869	trans-beta-Farnesene	1449	0.12%	
47.063	alpha-Humulene	1452	0.25%	
47.175	Unidentified	1454	0.04%	
47.314	Alloaromodendrene	1456	0.19%	
47.580	alpha-Acoradiene	1460	0.31%	
47.730	Unidentified	1463	0.1%	
47.812	beta-Acoradiene	1464	0.24%	
47.971	4,5-di-epi-Aristolochene	1467	0.08%	
48.173	Selina-4,11-diene	1470	1.91%	
48.240	Unidentified	1471	0.44%	

Ret. Time	Component	Ret. Idx.	Conc. %	
48.457	gamma-Curcumene	1474	13.86%	
48.515	Unidentified	1475	0.97%	
48.644	Ar-Curcumene	1477	3.22%	
48.840	(Z,E)-alpha-Farnesene	1480	0.82%	
49.164	beta-Selinene	1486	6.39%	
49.358	trans-Murrola-4(14),5-diene	1489	0.26%	
49.590	alpha-Selinene	1492	3.72%	
49.724	alpha-Muurolene	1494	0.27%	
49.996	Cadinene analogue	1499	0.31%	
50.285	beta-Bisabolene	1504	0.13%	
50.386	beta-Curcumene	1505	0.49%	
50.611	gamma-Cadinene	1509	0.34%	
50.907	delta-Cadinene	1514	0.78%	
51.120	cis-Calamenene	1518	0.03%	
51.193	Zonarene	1519	0.08%	
51.414	trans-gamma-Bisabolene	1523	0.09%	
51.759	trans-Cadina-1,4-diene	1528	0.08%	
51.873	Unidentified	1530	0.13%	
52.017	alpha-Cadinene	1533	0.07%	
52.246	Unidentified	1537	0.18%	
53.434	trans-Nerolidol	1557	0.1%	
53.725	Unidentified	1561	0.16%	
54.004	Unidentified	1566	0.95%	
54.515	Neryl isovalerate	1575	0.14%	
54.702	Caryophyllene oxide	1578	0.17%	
55.548	Guaiol	1592	0.09%	
56.049	Unidentified	1601	0.08%	
56.271	Copaborneol	1605	0.17%	
56.512	Rosifoliol	1609	0.27%	
56.780	Unidentified	1614	0.13%	
57.340	1-Epicubenol	1623	0.02%	
57.701	Unidentified	1630	0.04%	
57.813	beta-Eudesmol	1632	0.06%	
58.132	tau-Cadinol	1638	0.04%	
58.899	alpha-Eudesmol	1651	0.15%	
59.067	Intermedeol	1654	0.15%	
59.710	beta-Bisabolol	1665	0.07%	
59.815	Unidentified	1667	0.03%	
60.349	Unidentified	1677	0.03%	
60.576	alpha-Bisabolol	1681	0.05%	IFRA

Ret. Time	Component	Ret. Idx.	Conc. %
60.781	Neryl hexanoate	1684	0.04%
62.694	Geranyl hexanoate	1719	0.09%
64.309	Unidentified	1749	0.02%
65.417	Unidentified	1770	0.02%
65.743	Unidentified	1776	0.17%
66.415	Unidentified	1789	0.02%
96.390	Unidentified	2448	0.04%

Total Identified Compounds **96.13 %**

TIC
7,866,637


Intensity × 10^6
8
7
6
5
4
3
2
1
0
0 mins
12 mins
24 mins
36 mins
48 mins
61 mins
73 mins
85 mins
97 mins
109 mins