



Essential Oil University

GC/MS Report

Item	Lot
Goldenrod (Solidago) EO <i>Solidago canadensis</i>	2A
Date	Analyst
1/24/2025	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, Goldenrod (Solidago) EO, meets the expected chemical profile for authentic essential oil of *Solidago canadensis*. 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:** Goldenrod (Solidago) EO**Botanical Name:** Solidago canadensis**Lot Number:** 2A**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Canada**Analysis Date:** 1/24/2025**Manufacture Date:** April 2022

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

-12.84

1.48716

0.88114



Ret. Time	Component	Ret. Idx.	Conc. %	
8.983	Hexanol	863	0.01%	
10.419	Santolinatriene	901	0%	
11.488	Tricyclene	921	0.01%	
11.638	alpha-Thujene	923	0.05%	
12.046	alpha-Pinene	931	7.66%	
12.922	Camphene	947	0.41%	
14.178	Sabinene	970	6.13%	
14.471	beta-Pinene	976	2.14%	
15.101	Myrcene	987	6.27%	
16.026	Unidentified	1004	0.02%	
16.137	alpha-Phellandrene	1005	0.44%	
16.790	alpha-Terpinene	1015	0.11%	
17.274	para-Cymene	1023	0.12%	
17.609	Limonene	1028	22.01%	IFRA
17.693	beta-Phellandrene	1029	1.69%	
17.964	cis-beta-Ocimene	1033	0.04%	
18.635	trans-beta-Ocimene	1044	0.99%	
19.414	gamma-Terpinene	1056	0.22%	
20.184	trans-Sabinene hydrate	1068	0.08%	
21.204	Terpinolene	1083	1.47%	
21.538	para-Cymenene	1089	0.01%	
22.151	Linalool	1098	0.05%	IFRA
22.230	cis-Sabinene hydrate	1099	0.04%	
22.520	Nonanal	1103	0.02%	
22.621	alpha-Thujone	1105	0.03%	IFRA
23.075	trans-4,8-Dimethylnona-1,3,7-triene	1112	0.23%	
23.389	beta-Thujone	1116	0.06%	IFRA
23.638	trans-para-Mentha-2,8-dienol	1120	0.01%	
23.824	cis-para-Menth-2-en-1-ol	1122	0.03%	
24.691	cis-Limonene oxide	1135	0.02%	
24.851	trans-Sabinol	1137	0.01%	
24.930	trans-Pinocarveol	1139	0.01%	
25.030	trans-para-Menth-2-en-1-ol	1140	0.03%	
25.255	trans-Verbenol	1143	0.05%	
25.360	Camphor	1145	0.02%	
26.499	Lavandulol	1161	0.01%	
27.069	Borneol	1170	0.49%	
27.485	Menthol	1176	0.02%	
27.672	Terpinen-4-ol	1178	0.44%	
28.105	para-Cymen-8-ol	1185	0.01%	



Ret. Time	Component	Ret. Idx.	Conc. %	
28.467	Unidentified	1190	0.01%	
28.684	alpha-Terpineol	1193	0.03%	
29.480	Decanal	1205	0.01%	
30.284	Unidentified	1217	0.02%	
31.099	Hex-(3Z)-enyl-2-methylbutyrate	1229	0.02%	
31.456	cis-3-Hexenyl isovalerate	1234	0.01%	IFRA
31.523	Unidentified	1235	0.01%	
31.650	Unidentified	1237	0.03%	
31.989	Carvone	1242	0.28%	IFRA
34.736	Bornyl acetate	1282	7.32%	
35.006	trans-Sabinyl acetate	1286	0.04%	
37.202	Methyl geranate	1319	0.02%	
37.289	Myrtenyl acetate	1320	0.02%	
37.879	delta-Elemene isomer	1329	0.1%	
38.101	delta-Elemene	1333	0.49%	
38.871	alpha-Cubebene	1345	0.04%	
40.294	Cyclosativene	1366	0.05%	
40.738	alpha-Copaene	1373	0.13%	
41.150	Elemene isomer	1379	0.02%	
41.253	beta-Bourbonene	1381	0.13%	
41.529	beta-Cubebene	1385	0.57%	
41.636	beta-Elemene	1387	0.76%	
42.477	alpha-Funebrene	1400	0.02%	
42.751	alpha-Gurjunene	1404	0.47%	
42.977	Unidentified	1408	0.44%	
43.145	cis-alpha-Bergamotene	1410	0.04%	
43.470	beta-Ylangene	1415	0.34%	
43.528	trans-beta-Caryophyllene	1416	1.13%	
44.168	gamma-Elemene	1427	0.38%	
44.393	trans-alpha-Bergamotene	1430	0.46%	
44.905	Guaia-6,9-diene	1439	0.03%	
45.077	Isogermacrene D	1441	0.06%	
45.357	Unidentified	1446	0.07%	
45.491	trans-Murrola-3,5-diene	1448	0.07%	
45.662	trans-beta-Farnesene	1451	0.1%	
45.771	alpha-Humulene	1452	0.34%	
46.841	gamma-Gurjunene	1470	0.47%	
47.024	gamma-Muurolene	1472	0.15%	
47.190	gamma-Curcumene	1475	0.2%	
47.435	Germacrene D	1479	25.78%	



Ret. Time	Component	Ret. Idx.	Conc. %	
47.550	trans-beta-Bergamotene	1481	0.14%	
47.861	beta-Selinene	1486	0.15%	
48.045	gamma-Amorphene	1489	0.12%	
48.249	alpha-Zingiberene	1492	1.98%	
48.456	alpha-Muurolene	1495	0.16%	
48.718	delta-Amorphene	1500	0.13%	
48.830	trans,trans-alpha-Farnesene	1502	0.05%	
49.028	beta-Bisabolene	1505	0.06%	
49.326	gamma-Cadinene	1510	0.15%	
49.445	Cubedol	1512	0.14%	
49.634	delta-Cadinene	1515	0.37%	
49.979	beta-Sesquiphellandrene	1521	0.64%	
50.239	Unidentified	1525	0.04%	
50.737	alpha-Cadinene	1534	0.05%	
51.405	alpha-Elemol	1545	0.04%	
51.806	Unidentified	1552	0.03%	
52.019	Germacrene B	1555	0.43%	
52.179	trans-Nerolidol	1558	0.05%	
52.734	Unidentified	1568	0.06%	
53.064	Spathulenol	1573	0.18%	
53.286	Unidentified	1577	0.04%	
53.377	Caryophyllene oxide	1578	0.04%	
54.000	Salvia-4(14)-en-1-one	1589	0.02%	
54.139	Unidentified	1591	0.23%	
54.705	Viridiflorol	1601	0.07%	
54.823	Unidentified	1603	1.3%	
54.950	Copaborneol	1605	0.07%	
55.342	Unidentified	1612	0.02%	
55.634	Unidentified	1617	0.03%	
56.039	Unidentified	1625	0.06%	
56.662	Unidentified	1636	0.08%	
56.837	epi-alpha-Cadinol	1639	0.05%	
56.960	epi-alpha-Muurolol	1641	0.02%	
57.083	delta-Cadinol	1643	0.03%	
57.241	Unidentified	1646	0.02%	
57.548	Unidentified	1651	0.11%	
57.764	Unidentified	1655	0.03%	
59.193	Germacre-4(15),5,10(14)-trien-1-alpha-ol	1681	0.03%	
59.296	Germacre-4(15),5,10(14)-trien-1-alpha-ol isomer	1683	0.02%	
60.143	Curlone	1698	0.19%	



Ret. Time	Component	Ret. Idx.	Conc. %	
62.287	Unidentified	1738	0.07%	
62.816	Cyclocolorenone	1747	0.25%	
67.341	Neophytadiene	1834	0.02%	
67.593	Phytone	1839	0.01%	
72.816	meta-Camphorene	1943	0.06%	
74.538	para-Camphorene	1979	0.02%	

Total Identified Compounds **97.26 %**

