



# Essential Oil University

## GC/MS Report

| Item                                          | Lot                  |
|-----------------------------------------------|----------------------|
| Fir Needle EO Balsam<br><i>Abies balsamea</i> | 0D                   |
| Date                                          | Analyst              |
| 1/14/2025                                     | Dr. Robert S. Pappas |

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**The analysis of this batch sample, Fir Needle EO Balsam, 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**Botanical Name:** Abies balsamea**Lot Number:** 0D**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Canada**Analysis Date:** 1/14/2025**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  $\mu$ L**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

-25.60

1.47405

0.87148



| Ret. Time | Component            | Ret. Idx. | Conc. % |      |
|-----------|----------------------|-----------|---------|------|
| 5.908     | Toluene              | 762       | 0.01%   | IFRA |
| 6.507     | 1-Methoxyhexane      | 789       | 0.02%   |      |
| 9.730     | Santene              | 878       | 1.18%   |      |
| 10.735    | Unidentified         | 903       | 0.03%   |      |
| 11.668    | Tricyclene           | 920       | 0.73%   |      |
| 11.822    | alpha-Thujene        | 923       | 0.15%   |      |
| 12.250    | alpha-Pinene         | 931       | 17.01%  |      |
| 13.022    | alpha-Fenchene       | 945       | 0.1%    |      |
| 13.121    | Camphene             | 947       | 4.84%   |      |
| 13.316    | Thuja-2,4(10)diene   | 950       | 0.05%   |      |
| 14.297    | meta-Cymene          | 968       | 0.03%   |      |
| 14.384    | Sabinene             | 970       | 0.07%   |      |
| 14.730    | beta-Pinene          | 976       | 30.39%  |      |
| 15.312    | Myrcene              | 986       | 2.39%   |      |
| 16.215    | Pseudolimonene       | 1002      | 0.01%   |      |
| 16.280    | Unidentified         | 1003      | 0.02%   |      |
| 16.366    | alpha-Phellandrene   | 1005      | 0.23%   |      |
| 16.532    | delta-3-Carene       | 1007      | 10.91%  |      |
| 17.020    | alpha-Terpinene      | 1015      | 0.21%   |      |
| 17.497    | para-Cymene          | 1022      | 0.21%   |      |
| 17.826    | Limonene             | 1027      | 13.79%  | IFRA |
| 17.916    | beta-Phellandrene    | 1028      | 5.29%   |      |
| 19.656    | gamma-Terpinene      | 1055      | 0.31%   |      |
| 21.200    | Isoterpinolene       | 1079      | 0.03%   |      |
| 21.461    | Terpinolene          | 1083      | 1.17%   |      |
| 21.656    | Fenchone             | 1086      | 0.13%   |      |
| 21.776    | para-Cymenene        | 1088      | 0.08%   |      |
| 22.166    | alpha-Campholenal    | 1094      | 0.03%   |      |
| 22.404    | Linalool             | 1097      | 0.06%   | IFRA |
| 23.716    | Fenchyl alcohol      | 1116      | 0.12%   |      |
| 24.088    | Unidentified         | 1122      | 0.01%   |      |
| 24.250    | alpha-Campholenal    | 1124      | 0.02%   |      |
| 25.194    | trans-Pinocarveol    | 1138      | 0.09%   |      |
| 25.618    | Camphor              | 1144      | 0.24%   |      |
| 25.870    | Unidentified         | 1148      | 0.01%   |      |
| 26.171    | trans-beta-Terpineol | 1152      | 0.04%   |      |
| 26.550    | trans-Pinocamphone   | 1158      | 0.02%   |      |
| 26.689    | Unidentified         | 1160      | 0.02%   |      |
| 26.760    | Isoborneol           | 1161      | 0.01%   |      |
| 27.334    | Borneol              | 1169      | 0.82%   |      |



| Ret. Time | Component               | Ret. Idx. | Conc. % |      |
|-----------|-------------------------|-----------|---------|------|
| 27.619    | Isopinocampphone        | 1173      | 0.05%   |      |
| 27.944    | Terpinen-4-ol           | 1178      | 0.26%   |      |
| 28.374    | Unidentified            | 1184      | 0.01%   |      |
| 28.948    | alpha-Terpineol         | 1192      | 1.15%   |      |
| 29.171    | Estragole               | 1196      | 0.03%   | IFRA |
| 29.739    | Verbenone               | 1204      | 0.01%   |      |
| 30.484    | endo-Fenchyl acetate    | 1215      | 0.04%   |      |
| 31.099    | Unidentified            | 1224      | 0.01%   |      |
| 31.303    | Thymol methyl ether     | 1227      | 0.04%   |      |
| 32.283    | Carvone                 | 1241      | 0.01%   | IFRA |
| 32.931    | Piperitone              | 1251      | 0.06%   |      |
| 34.569    | Phellandral             | 1275      | 0.01%   |      |
| 34.745    | Unidentified            | 1277      | 0.01%   |      |
| 35.017    | Bornyl acetate          | 1281      | 5.87%   |      |
| 35.172    | Unidentified            | 1284      | 0.02%   |      |
| 35.401    | Thymol                  | 1287      | 0.01%   |      |
| 35.614    | Unidentified            | 1290      | 0.01%   |      |
| 35.755    | Unidentified            | 1292      | 0.01%   |      |
| 38.866    | Unidentified            | 1339      | 0.01%   |      |
| 39.370    | alpha-Longipinene       | 1347      | 0.13%   |      |
| 40.634    | alpha-Ylangene          | 1366      | 0.03%   |      |
| 40.931    | Longicyclene            | 1371      | 0.01%   |      |
| 41.055    | Unidentified            | 1373      | 0.01%   |      |
| 41.209    | Geranyl acetate         | 1375      | 0.01%   |      |
| 42.089    | Sativene                | 1388      | 0.02%   |      |
| 43.198    | Junipene                | 1406      | 0.43%   |      |
| 43.846    | beta-Caryophyllene      | 1416      | 0.14%   |      |
| 44.709    | trans-alpha-Bergamotene | 1430      | 0.01%   |      |
| 45.953    | trans-beta-Farnesene    | 1450      | 0.01%   |      |
| 46.093    | alpha-Humulene          | 1452      | 0.06%   |      |
| 47.807    | Unidentified            | 1479      | 0.04%   |      |
| 48.173    | beta-Selinene           | 1485      | 0.02%   |      |
| 48.515    | Unidentified            | 1491      | 0.01%   |      |
| 48.612    | alpha-Selinene          | 1492      | 0.02%   |      |
| 48.765    | Unidentified            | 1495      | 0.01%   |      |
| 48.868    | beta-Himachalene        | 1496      | 0.04%   |      |
| 49.044    | Unidentified            | 1499      | 0.02%   |      |
| 49.348    | beta-Bisabolene         | 1504      | 0.35%   |      |
| 49.529    | Unidentified            | 1507      | 0.01%   |      |
| 49.644    | Unidentified            | 1509      | 0.01%   |      |



| Ret. Time | Component              | Ret. Idx. | Conc. % |  |
|-----------|------------------------|-----------|---------|--|
| 49.960    | delta-Cadinene         | 1515      | 0.03%   |  |
| 51.297    | trans-alpha-Bisabolene | 1537      | 0.04%   |  |
| 52.482    | trans-Nerolidol        | 1557      | 0.01%   |  |

Total Identified Compounds **99.69 %**

