



# Essential Oil University

## GC/MS Report

| Item                                                | Lot                         |
|-----------------------------------------------------|-----------------------------|
| <b>Geranium EO</b><br><i>Pelargonium graveolens</i> | <b>5AC</b>                  |
| Date                                                | Analyst                     |
| <b>11/18/2025</b>                                   | <b>Dr. Robert S. Pappas</b> |

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**The analysis of this batch sample, Geranium EO, meets the expected chemical profile for authentic essential oil of *Pelargonium graveolens*. 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:** Geranium EO**Botanical Name:** Pelargonium graveolens**Lot Number:** 5AC**Production Method:** Steam distilled**Sample Type:** EO - Single**Country of Origin:** Egypt**Analysis Date:** 11/18/2025**Manufacture Date:** September 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

Optical Rotation @20°C

Refractive Index @20°C

Specific Gravity @20°C

### METHOD

USP[781]

USP[831]

USP[841]

### RESULTS

-8.56

1.46692

0.89235



| Ret. Time | Component                       | Ret. Idx. | Conc. % |               |
|-----------|---------------------------------|-----------|---------|---------------|
| 7.990     | cis-Salvene                     | 820       | 0.02%   |               |
| 8.559     | 3-Methylpentanol                | 834       | 0.03%   |               |
| 12.564    | Unidentified                    | 923       | 0.02%   |               |
| 12.683    | alpha-Pinene                    | 925       | 0.48%   | ALLERGEN      |
| 14.712    | Bois de Rose oxide              | 961       | 0.05%   |               |
| 15.824    | Myrcene                         | 981       | 0.14%   | PROP. 65      |
| 15.880    | Unidentified                    | 982       | 0.03%   |               |
| 16.196    | alpha-Terpinene                 | 987       | 0.02%   | ALLERGEN      |
| 16.805    | Unidentified                    | 998       | 0.02%   |               |
| 16.892    | alpha-Phellandrene              | 999       | 0.07%   |               |
| 18.041    | para-Cymene                     | 1017      | 0.1%    |               |
| 18.346    | Limonene                        | 1021      | 0.21%   | ALLERGEN IFRA |
| 18.453    | beta-Phellandrene               | 1023      | 0.06%   |               |
| 18.550    | Unidentified                    | 1024      | 0.04%   |               |
| 18.675    | Unidentified                    | 1026      | 0.02%   |               |
| 18.745    | cis-beta-Ocimene                | 1027      | 0.09%   |               |
| 19.436    | trans-beta-Ocimene              | 1038      | 0.12%   |               |
| 21.048    | cis-Linalool oxide (furanoid)   | 1062      | 0.17%   |               |
| 22.050    | alpha-Terpinene                 | 1077      | 0.03%   | ALLERGEN      |
| 22.125    | trans-Linalool oxide (furanoid) | 1078      | 0.1%    |               |
| 22.995    | Linalool                        | 1091      | 5.22%   | ALLERGEN IFRA |
| 23.246    | Unidentified                    | 1095      | 0.02%   |               |
| 23.716    | cis-Rose oxide                  | 1102      | 1.54%   |               |
| 24.836    | trans-Rose oxide                | 1118      | 0.63%   |               |
| 26.379    | Unidentified                    | 1140      | 0.08%   |               |
| 26.621    | Citronellal                     | 1143      | 0.11%   | IFRA          |
| 26.893    | Menthone                        | 1147      | 2.35%   |               |
| 27.077    | Unidentified                    | 1150      | 0.1%    |               |
| 27.513    | Isomenthone                     | 1156      | 7.6%    |               |
| 27.988    | Unidentified                    | 1163      | 0.02%   |               |
| 28.614    | Terpinen-4-ol                   | 1172      | 0.04%   |               |
| 29.164    | Isomenthol                      | 1180      | 0.14%   | ALLERGEN      |
| 29.606    | alpha-Terpineol                 | 1186      | 0.39%   | ALLERGEN      |
| 31.009    | Unidentified                    | 1206      | 0.05%   |               |
| 31.596    | Nerol                           | 1215      | 0.14%   |               |
| 31.792    | Citronellol                     | 1218      | 33.38%  | ALLERGEN IFRA |
| 32.546    | Neral                           | 1229      | 0.27%   | ALLERGEN IFRA |
| 33.376    | Geraniol                        | 1241      | 12.75%  | ALLERGEN IFRA |
| 33.554    | Unidentified                    | 1243      | 0.17%   |               |
| 34.000    | Menthyl acetate                 | 1250      | 0.04%   |               |



| Ret. Time | Component                 | Ret. Idx. | Conc. % |               |
|-----------|---------------------------|-----------|---------|---------------|
| 34.260    | Unidentified              | 1254      | 0.06%   |               |
| 34.560    | Geranial                  | 1258      | 0.46%   | ALLERGEN IFRA |
| 34.949    | Citronellyl formate       | 1264      | 9.72%   |               |
| 35.156    | Neryl formate             | 1267      | 0.07%   |               |
| 36.623    | Geranyl formate           | 1288      | 3.08%   |               |
| 39.912    | alpha-Cubebene            | 1337      | 0.16%   |               |
| 40.047    | Citronellyl acetate       | 1339      | 0.33%   | IFRA          |
| 40.118    | Eugenol                   | 1340      | 0.18%   | ALLERGEN IFRA |
| 40.415    | Unidentified              | 1345      | 0.03%   |               |
| 41.376    | alpha-Ylangene            | 1359      | 0.04%   |               |
| 41.795    | alpha-Copaene             | 1366      | 0.5%    |               |
| 41.910    | Geranyl acetate           | 1367      | 0.27%   | ALLERGEN      |
| 42.318    | beta-Bourbonene           | 1374      | 1.05%   |               |
| 42.512    | alpha-Bourbonene          | 1377      | 0.1%    |               |
| 42.669    | beta-Elemene              | 1379      | 0.11%   |               |
| 42.864    | Phenethyl isobutyrate     | 1382      | 0.03%   |               |
| 43.822    | Cyperene                  | 1396      | 0.05%   |               |
| 44.535    | beta-Ylangene             | 1408      | 0.09%   |               |
| 44.608    | beta-Caryophyllene        | 1409      | 1.47%   | ALLERGEN      |
| 45.251    | beta-Copaene              | 1419      | 0.1%    |               |
| 45.857    | Citronellyl propionate    | 1429      | 0.35%   |               |
| 45.974    | 6,9-Guaiadiene            | 1431      | 0.46%   |               |
| 46.158    | Isogermacrene D           | 1433      | 0.09%   |               |
| 46.460    | Unidentified              | 1438      | 0.44%   |               |
| 46.859    | alpha-Humulene            | 1445      | 0.24%   |               |
| 47.138    | Alloaromodendrene         | 1449      | 0.14%   |               |
| 47.681    | Geranyl propanoate        | 1458      | 0.52%   |               |
| 47.887    | cis-Cadina-1(6),4-diene   | 1461      | 0.23%   |               |
| 48.075    | trans-Cadina-1(6),4-diene | 1464      | 0.11%   |               |
| 48.105    | Unidentified              | 1464      | 0.09%   |               |
| 48.335    | alpha-Amorphene           | 1468      | 0.07%   |               |
| 48.451    | Germacrene D              | 1470      | 1.09%   |               |
| 48.625    | Selina-4,11-diene         | 1473      | 0.15%   |               |
| 48.825    | delta-Selinene            | 1476      | 0.05%   |               |
| 48.944    | beta-Selinene             | 1478      | 0.17%   |               |
| 49.071    | Viridiflorene             | 1480      | 0.25%   |               |
| 49.115    | gamma-Amorphene           | 1481      | 0.09%   |               |
| 49.343    | Bicyclogermacrene         | 1484      | 0.45%   |               |
| 49.532    | alpha-Muurolene           | 1487      | 0.19%   |               |
| 49.795    | delta-Amophrene           | 1491      | 0.05%   |               |



| Ret. Time | Component                   | Ret. Idx. | Conc. % |
|-----------|-----------------------------|-----------|---------|
| 49.890    | trans,trans-alpha-Farnesene | 1493      | 0.04%   |
| 49.947    | 4-epi-cis-Dihydroagarofuran | 1494      | 0.08%   |
| 50.070    | Geranyl isobutyrate         | 1496      | 0.03%   |
| 50.221    | beta-Dihydroagarofuran      | 1498      | 0.02%   |
| 50.409    | gamma-Cadinene              | 1501      | 0.21%   |
| 50.715    | delta-Cadinene              | 1506      | 0.8%    |
| 50.905    | cis-Calamenene              | 1510      | 0.27%   |
| 50.995    | Zonarene                    | 1511      | 0.14%   |
| 51.123    | Citronellyl butyrate        | 1513      | 0.54%   |
| 51.566    | trans-Cadina-1,4-diene      | 1521      | 0.19%   |
| 51.828    | Selina-4(15),7(11)-diene    | 1525      | 0.06%   |
| 52.071    | alpha-Calacorene            | 1529      | 0.06%   |
| 52.469    | alpha-Agarofuran            | 1536      | 0.22%   |
| 52.938    | Geranyl butyrate            | 1544      | 0.7%    |
| 53.100    | 1-nor-Bourbonanone          | 1546      | 0.05%   |
| 53.674    | Unidentified                | 1556      | 0.02%   |
| 54.172    | Spathulenol                 | 1564      | 0.15%   |
| 54.302    | Unidentified                | 1566      | 0.03%   |
| 54.521    | Phenylethyl tiglate         | 1570      | 0.67%   |
| 54.713    | Globulol                    | 1573      | 0.04%   |
| 55.365    | Neryl (S)-2-methylbutanoate | 1584      | 0.06%   |
| 55.944    | Eudesm-5-en-11-ol           | 1594      | 0.03%   |
| 56.436    | 1,10-di-epi-Cubenol         | 1602      | 0.11%   |
| 56.843    | 10-epi-gamma-Eudesmol       | 1610      | 3.27%   |
| 57.145    | 1-Epicubenol                | 1615      | 0.12%   |
| 57.386    | gamma-Eudesmol              | 1619      | 0.09%   |
| 57.609    | Eremoligenol isomer         | 1623      | 0.12%   |
| 58.009    | Eudesmol analogue           | 1630      | 0.09%   |
| 58.085    | Unidentified                | 1631      | 0.06%   |
| 58.193    | Unidentified                | 1633      | 0.09%   |
| 58.590    | Unidentified                | 1640      | 0.2%    |
| 58.662    | Unidentified                | 1642      | 0.2%    |
| 58.942    | Unidentified                | 1647      | 0.22%   |
| 59.061    | trans-Citronellyl tiglate   | 1649      | 0.18%   |
| 60.194    | Citronellyl hexanoate       | 1669      | 0.05%   |
| 60.957    | Geranyl tiglate             | 1682      | 0.74%   |
| 61.931    | Geraniol hexanoate          | 1699      | 0.05%   |
| 63.839    | Geranyl hexanoate isomer    | 1735      | 0.02%   |

Total Identified Compounds **98 %**



TIC  
10,183,039

