

Date: October 15th, 2020

CERTIFICATE OF ANALYSIS - GC PROFILING

Sample identification: Ginger CO₂- 200793497

Type: Essential oil

Source: Zingiber officinale

Country of Origin: China

ANALYSIS

Method: 10152018_10:1split.m - Analysis of the composition of an essential oil, or other volatile liquid, by GC-FID, identifications validated by GC-MS.

Analysis date: October 9th, 2020

Physical aspect: Light yellow liquid

CONCLUSION

No adulterant, contaminant or diluent has been detected using this method.

Analyzed and approved by:

Dr. Hussam Bdour
Chief Quality Control Chemist
IL Health & Beauty Natural Oils Co., Inc.

| Peak | Compound | RT | Area Sum % |
|------|----------------------------------|--------|------------|
| 1 | 2-Heptanone | 7.381 | 0.02 |
| 2 | 2-Heptanol | 7.793 | 0.07 |
| 3 | Tricyclene | 8.584 | 0.07 |
| 4 | α -Pinene | 9.196 | 1.02 |
| 5 | Camphene | 9.927 | 3.86 |
| 6 | Sabinene + β -Pinene | 11.49 | 0.23 |
| 7 | Neomenthol | 12.498 | 0.16 |
| 8 | β -Myrcene | 12.689 | 0.64 |
| 9 | α -Phellandrene | 13.302 | 0.14 |
| 10 | Octanal | 13.502 | 0.02 |
| 11 | δ 3-carene | 13.664 | 0.02 |
| 12 | unknown | 14.142 | 0.02 |
| 13 | p-Cymene | 14.7 | 0.04 |
| 14 | Limonene + β -Phellandrene | 14.947 | 3.65 |
| 15 | 1,8-Cineole | 15.085 | 2.53 |
| 16 | γ -Terpinene | 17.176 | 0.03 |
| 17 | α -Terpinolene | 19.356 | 0.16 |
| 18 | trans-Linalool oxide | 19.963 | 0.15 |
| 19 | Rosefuran | 20.367 | 0.15 |
| 20 | Linalool | 20.556 | 0.3 |
| 21 | 2-Nonanol | 21.167 | 0.03 |
| 22 | unknown | 21.742 | 0.02 |
| 23 | cis-para-Menth-2-en-1-ol | 21.917 | 0.04 |
| 24 | trans-para-Mentha-2-en-1-ol | 23.407 | 0.02 |
| 25 | Camphor | 23.473 | 0.09 |
| 26 | Camphene hydrate | 23.765 | 0.07 |
| 27 | Isoborneol | 24.557 | 0.04 |
| 28 | Citronellal | 24.87 | 0.05 |
| 29 | Borneol | 25.332 | 0.97 |
| 30 | Isoneral | 25.581 | 0.05 |
| 31 | Terpinen-4-ol | 26.36 | 0.1 |
| 32 | Rosefuran epoxide | 26.698 | 0.13 |
| 33 | α -Terpineol | 27.567 | 0.63 |
| 34 | Myrtenal | 27.832 | 0.04 |
| 35 | Myrtenol | 28.025 | 0.02 |
| 36 | Decanal | 29.274 | 0.02 |
| 37 | Citronellol | 31.261 | 0.1 |
| 38 | Neral | 31.989 | 0.39 |
| 39 | Geraniol | 33.381 | 0.16 |

| | | | |
|----|------------------------------|--------|-------|
| 40 | Geranial | 34.565 | 0.64 |
| 41 | Bornyl acetate | 35.51 | 0.11 |
| 42 | 2-Undecanone | 36.652 | 0.16 |
| 43 | δ -Elemene | 39.632 | 0.06 |
| 44 | Citronellol acetate | 41.382 | 0.17 |
| 45 | Cyclosativene II | 41.638 | 0.1 |
| 46 | α -Copaene | 42.501 | 0.5 |
| 47 | β -Elemene | 44.008 | 0.78 |
| 48 | 7-epi-Sesquithujene | 45.427 | 0.27 |
| 49 | β -Caryophyllene | 45.758 | 0.1 |
| 50 | β -Copaene | 46.614 | 0.04 |
| 51 | γ -Elemene | 47.293 | 0.27 |
| 52 | trans- α -Bergamotene | 47.552 | 0.12 |
| 53 | unknown | 48.302 | 0.11 |
| 54 | Alloaromadendrene | 48.957 | 0.25 |
| 55 | Sesquisabinene B | 49.295 | 0.23 |
| 56 | (E)- β -Farnesene | 49.687 | 0.48 |
| 57 | Selina-4,11-diene | 50.1 | 0.15 |
| 58 | γ -Muurolene | 50.372 | 0.16 |
| 59 | Germacrene D | 50.663 | 1.1 |
| 60 | β -Selinene | 50.953 | 0.29 |
| 61 | Ar-Curcumene | 51.492 | 8.1 |
| 62 | unknown | 51.867 | 2.26 |
| 63 | α -Zingiberene | 52.817 | 35.68 |
| 64 | β -Bisabolene | 53.56 | 7.57 |
| 65 | (3E,6E)- α -Farnesene | 53.825 | 4.88 |
| 66 | δ -Cadinene | 54.307 | 0.27 |
| 67 | β -Sesquiphellandrene | 54.717 | 14.08 |
| 68 | unknown | 54.883 | 0.07 |
| 69 | (E)- γ -Bisabolene | 55.092 | 0.31 |
| 70 | α -Elemol | 56.138 | 0.17 |
| 71 | Germacrene B | 56.276 | 0.26 |
| 72 | trans-Sesquisabinene hydrate | 56.667 | 0.14 |
| 73 | (E)-Nerolidol | 57.657 | 0.39 |
| 74 | unknown | 59.274 | 0.24 |
| 75 | unknown | 61.027 | 0.4 |
| 76 | unknown | 61.287 | 0.1 |
| 77 | cis-Zingiberenol | 62.064 | 0.2 |
| 78 | β -Eudesmol | 62.509 | 0.15 |
| 79 | γ -Eudesmol | 62.665 | 0.32 |
| 80 | α -Eudesmol | 62.786 | 0.06 |

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|-----|-------------------------|--------|---------------|
| 81 | unknown | 63.427 | 0.11 |
| 82 | unknown | 63.777 | 0.04 |
| 83 | unknown | 63.946 | 0.28 |
| 84 | unknown | 64.063 | 0.13 |
| 85 | unknown | 64.276 | 0.03 |
| 86 | unknown | 64.414 | 0.02 |
| 87 | unknown | 64.458 | 0.03 |
| 88 | unknown | 64.689 | 0.08 |
| 89 | unknown | 64.872 | 0.02 |
| 90 | unknown | 65.11 | 0.11 |
| 91 | unknown | 65.198 | 0.01 |
| 92 | unknown | 65.325 | 0.03 |
| 93 | unknown | 65.406 | 0.01 |
| 94 | unknown | 65.701 | 0.02 |
| 95 | unknown | 65.82 | 0.02 |
| 96 | unknown | 65.974 | 0.08 |
| 97 | unknown | 66.437 | 0.02 |
| 98 | unknown | 66.545 | 0.02 |
| 99 | unknown | 66.722 | 0.04 |
| 100 | unknown | 66.788 | 0.04 |
| 101 | unknown | 66.932 | 0.04 |
| 102 | unknown | 66.986 | 0.01 |
| 103 | unknown | 67.067 | 0.02 |
| 104 | unknown | 67.262 | 0.01 |
| 105 | unknown | 67.382 | 0.17 |
| 106 | unknown | 67.572 | 0.03 |
| 107 | unknown | 67.603 | 0.05 |
| 108 | unknown | 67.638 | 0.01 |
| 109 | unknown | 67.853 | 0.05 |
| 110 | unknown | 68.042 | 0.01 |
| 111 | unknown | 68.267 | 0.02 |
| 112 | unknown | 68.699 | 0.01 |
| 113 | unknown | 68.917 | 0.03 |
| 114 | unknown | 69.207 | 0.01 |
| 115 | unknown | 69.711 | 0.03 |
| 116 | unknown | 69.775 | 0.06 |
| 117 | unknown | 70.18 | 0.24 |
| 118 | unknown | 71.37 | 0.1 |
| | Total identified | | 94.76% |

