



## CERTIFICATE of ANALYSIS (COA)

|                    |                                  |
|--------------------|----------------------------------|
| COMMON NAME        | Cardamom - Organic               |
| LATIN NAME         | <i>Elettaria cardamomum</i>      |
| COUNTRY OF ORIGIN  | Honduras                         |
| CULTIVATION METHOD | Certified Organic (USDA, NOP)    |
| TYPE               | Essential Oil                    |
| EXTRACTION METHOD  | Steam Distilled                  |
| PLANT PART         | Whole Fruit                      |
| USE                | Aromatherapy, Natural Perfumery. |

|                    |               |
|--------------------|---------------|
| SKU                | 144           |
| LOT #              | 17            |
| MANUFACTURING DATE | February 2022 |
| BEST BY DATE       | February 2025 |

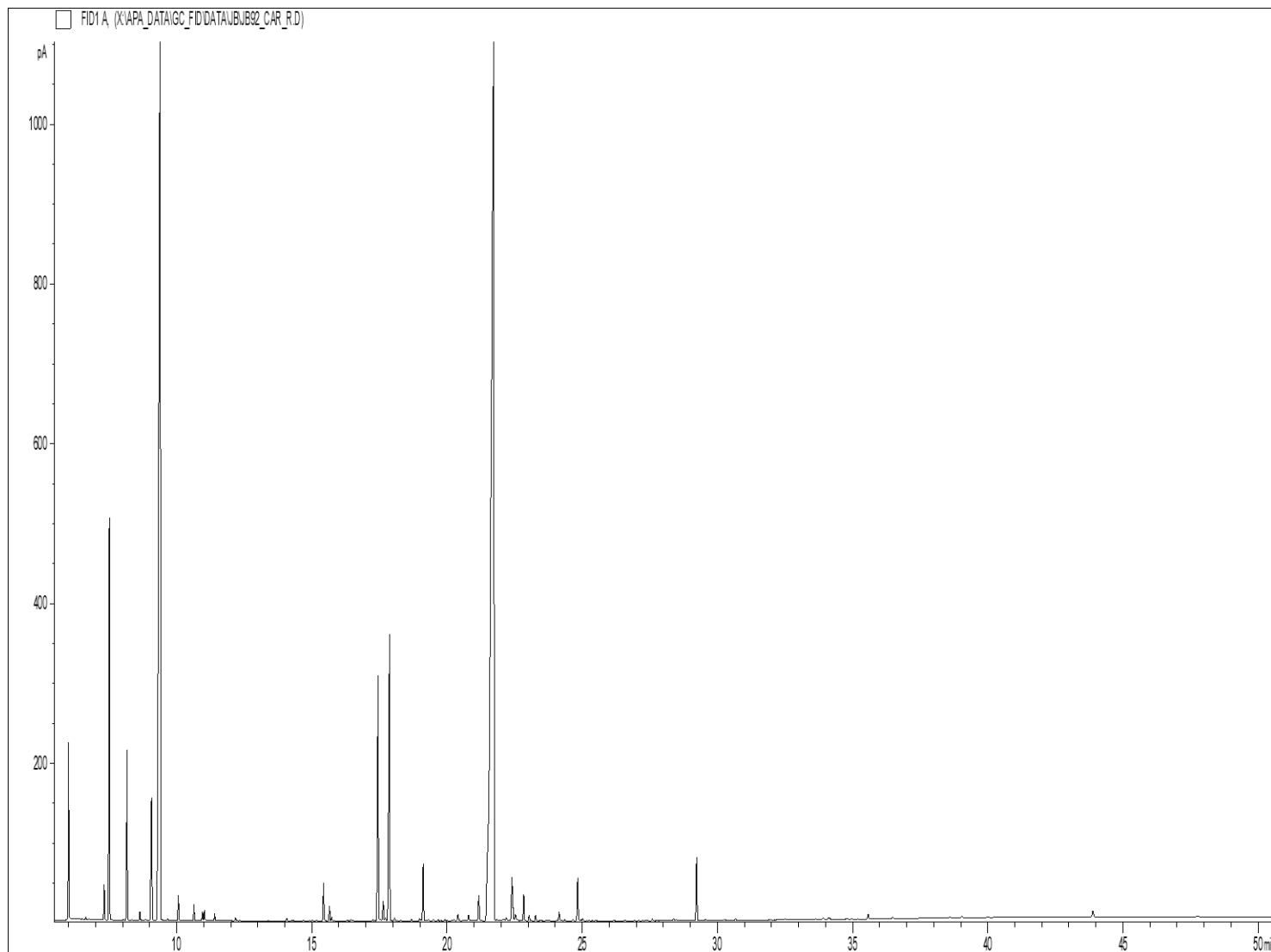
|                        |                               |        |
|------------------------|-------------------------------|--------|
|                        | <b>SPECIFICATIONS (Range)</b> |        |
| SPECIFIC GRAVITY @20°C | 0.908 – 0.949                 | 0.9185 |
| REFRACTIVE INDEX @20°C | 1.445 – 1.483                 | 1.4629 |
| OPTICAL ROTATION @20°C | +22° to +44°                  | na     |

|                          |                                            |          |
|--------------------------|--------------------------------------------|----------|
| PHYSICAL APPEARANCE      | Transparent liquid                         | Conforms |
| COLOR                    | Colorless to pale yellow                   | Conforms |
| ODOR                     | Fresh, spicy, with sweet woody undertones. | Conforms |
| SOLUBILITY               | Soluble in alcohol and fixed oils          |          |
| SPECIAL USE INSTRUCTIONS | Dilute before use                          |          |

|                   |                                                                                                                   |
|-------------------|-------------------------------------------------------------------------------------------------------------------|
| MAIN CONSTITUENTS | Terpenyl Acetate (35-45%), 1.8 Cineole (25-37%), Linalyl Acetate (2-8%), Linalool (1-5%), Alpha-Terpineol (1-3%). |
|-------------------|-------------------------------------------------------------------------------------------------------------------|

## THIRD PARTY LAB ANALYSIS (GCMS)

### CHROMATOGRAPHIC PROFILE:



- ORGANIC CARDAMOM EO - SKU 144 LOT 17 -

| Peaks | RT (min) | Compound name                   | %            | Standard (%) | Allergens (%) |
|-------|----------|---------------------------------|--------------|--------------|---------------|
| 1     | 6.00     | alpha-PINENE                    | 2.03         |              |               |
| 2     |          | alpha-THUYENE                   |              |              |               |
| 3     | 6.64     | CAMPHENE                        | 0.03         |              |               |
| 4     | 7.32     | beta-PINENE                     | 0.47         |              |               |
| 5     | 7.51     | <b>SABINENE</b>                 | <b>5.39</b>  |              |               |
| 6     | 8.03     | delta3-CARENE                   | 0.01         |              |               |
| 7     | 8.16     | beta-MYRCENE                    | 2.17         |              |               |
| 8     | 8.35     | alpha-PHELLANDRENE              | 0.01         |              |               |
| 9     | 8.64     | alpha-TERPINENE                 | 0.13         |              |               |
| 10    | 8.85     | 1,8-CINEOLE, 2,3-DEHYDRO-       | 0.03         |              |               |
| 11    | 9.07     | LIMONENE                        | 2.45         |              | 2.45          |
| 12    | 9.39     | <b>1,8-CINEOLE</b>              | <b>25.76</b> |              |               |
| 13    | 9.67     | cis-beta-OCIMENE                | 0.03         |              |               |
| 14    | 10.07    | gamma-TERPINENE                 | 0.28         |              |               |
| 15    | 10.08    | trans-beta-OCIMENE              | 0.05         |              |               |
| 16    | 10.64    | p-CYMENE                        | 0.21         |              |               |
| 17    | 10.96    | TERPINOLENE                     | 0.12         |              |               |
| 18    | 11.03    | OCTANAL                         | 0.14         |              |               |
| 19    | 11.41    | 1,3,7-NONATRIENE, 4,8-DIMETHYL- | 0.08         |              |               |
| 20    | 12.18    | 5-HEPTEN-2-ONE, 6-METHYL-       | 0.04         |              |               |
| 21    | 14.07    | TERPENIC COMPOUND               | 0.04         |              |               |
| 22    | 14.70    | LINALOOL cis-OXIDE              | 0.01         |              |               |
| 23    | 15.02    | LIMONENE cis-1,2-EPOXIDE        | 0.01         |              |               |
| 24    | 15.17    | ACETIC ACID                     | 0.01         |              |               |
| 25    | 15.44    | trans-THUYANOL                  | 0.57         |              |               |
| 26    | 15.65    | TERPENE ISOMER                  | 0.23         |              |               |
| 27    | 15.74    | OCTYL ACETATE                   | 0.05         |              |               |
| 28    | 16.30    | YLANGENE                        | 0.01         |              |               |
| 29    | 16.45    | DECANAL                         | 0.04         |              |               |
| 30    | 17.26    | E-SOLANONE                      | 0.02         |              |               |
| 31    | 17.45    | <b>LINALOOL</b>                 | <b>4.17</b>  |              | 4.17          |
| 32    | 17.64    | cis-THUYANOL                    | 0.33         |              |               |
| 33    | 17.73    | 1-OCTANOL                       | 0.06         |              |               |
| 34    | 17.88    | <b>LINALYL ACETATE</b>          | <b>5.46</b>  |              |               |
| 35    | 18.06    | trans-p-MENTH-2-EN-1-OL         | 0.05         |              |               |
| 36    | 18.69    | BORNYL ACETATE                  | 0.03         |              |               |
| 37    | 18.98    | beta-ELEMENE                    | 0.04         |              |               |
| 38    | 19.04    | SESQUITERPENE                   | 0.02         |              |               |
| 39    | 19.12    | TERPINENE-4-OL                  | 0.89         |              |               |
| 40    | 19.26    | SESQUITERPENE                   | 0.01         |              |               |
| 41    | 19.31    | LAVANDULYL ACETATE              | 0.02         |              |               |
| 42    | 19.49    | beta-TERPENYL ACETATE           | 0.02         |              |               |
| 43    | 19.67    | cis-p-MENTH-2-EN-1-OL           | 0.02         |              |               |

| Peaks | RT (min) | Compound name                                      | %            | Standard (%) | Allergens (%) |
|-------|----------|----------------------------------------------------|--------------|--------------|---------------|
| 44    | 19.91    | SESQUITERPENE                                      | 0.02         |              |               |
| 45    | 20.20    | SESQUITERPENE                                      | 0.01         |              |               |
| 46    | 20.25    | SESQUITERPENE                                      | 0.02         |              |               |
| 47    | 20.40    | delta-TERPENYL ACETATE                             | 0.12         |              |               |
| 48    | 20.80    | delta-TERPINEOL                                    | 0.09         |              |               |
| 49    | 21.01    | cis-PIPERITOL                                      | 0.03         |              |               |
| 50    | 21.17    | NERAL                                              | 0.44         |              | 0.44          |
| 51    | 21.73    | <b>TERPENYL ACETATE</b>                            | <b>43.17</b> |              |               |
| 52    |          | alpha-TERPINEOL                                    |              |              |               |
| 53    | 21.83    | SESQUITERPENE                                      | 0.02         |              |               |
| 54    | 21.89    | SESQUITERPENE                                      | 0.01         |              |               |
| 55    | 22.05    | ALIPHATIC ESTER                                    | 0.02         |              |               |
| 56    | 22.11    | ALIPHATIC ESTER                                    | 0.02         |              |               |
| 57    | 22.19    | SESQUITERPENE                                      | 0.07         |              |               |
| 58    | 22.40    | GERANIAL                                           | 0.77         |              | 0.77          |
| 59    | 22.44    | beta-SELINENE                                      | 0.15         |              |               |
| 60    | 22.52    | alpha-SELINENE                                     | 0.16         |              |               |
| 61    | 22.84    | GERANYL ACETATE                                    | 0.42         |              |               |
| 62    | 23.04    | TERPENIC ESTER                                     | 0.09         |              |               |
| 63    | 23.27    | gamma-CADINENE                                     | 0.09         |              |               |
| 64    | 23.45    | SESQUITERPENE                                      | 0.02         |              |               |
| 65    | 23.66    | ALIPHATIC ALCOHOL                                  | 0.02         |              |               |
| 66    | 24.07    | ALIPHATIC ESTER                                    | 0.01         |              |               |
| 67    | 24.14    | NEROL                                              | 0.14         |              |               |
| 68    | 24.24    | 2-TRIDECANONE                                      | 0.02         |              |               |
| 69    | 24.35    | GERANYL PROPIONATE                                 | 0.01         |              |               |
| 70    | 24.65    | ALIPHATIC ESTER                                    | 0.02         |              |               |
| 71    | 24.83    | GERANIOL                                           | 0.71         |              | 0.71          |
| 72    | 24.95    | GERMACRENE B                                       | 0.02         |              |               |
| 73    | 25.02    | E-GERANYL ACETONE                                  | 0.03         |              |               |
| 74    | 25.25    | ALIPHATIC COMPOUND                                 | 0.02         |              |               |
| 75    | 26.58    | TERPENIC ESTER                                     | 0.01         |              |               |
| 76    | 27.59    | SESQUITERPENOL                                     | 0.03         |              |               |
| 77    | 28.38    | SESQUITERPENOL                                     | 0.04         |              |               |
| 78    | 29.23    | NEROLIDOL                                          | 1.01         |              |               |
| 79    | 29.57    | CAPRYLIC ACID                                      | 0.02         |              |               |
| 80    | 30.67    | 1-METHYL-4-(1-ACETOXY-1-METHYLETHYL)-CYCLOHEX-2-EN | 0.03         |              |               |
| 81    | 32.51    | ALCOHOL COMPOUND                                   | 0.02         |              |               |
| 82    | 33.63    | SESQUITERPENOL                                     | 0.02         |              |               |
| 83    | 33.91    | Z,E-FARNESYL ACETATE                               | 0.06         |              |               |
| 84    | 34.11    | COMPOUND Mw=150                                    | 0.05         |              |               |
| 85    | 34.14    | FARNESAL                                           | 0.04         |              |               |
| 86    | 34.77    | OXYGENED COMPOUND                                  | 0.02         |              |               |

| Peaks | RT (min) | Compound name            | %            | Standard (%) | Allergens (%) |
|-------|----------|--------------------------|--------------|--------------|---------------|
| 87    | 34.80    | OXYGENED COMPOUND        | 0.02         |              |               |
| 88    | 34.96    | TRICOSANE                | 0.01         |              |               |
| 89    | 35.57    | E,E-FARNESOL             | 0.08         |              | 0.08          |
| 90    | 36.22    | TERPENIC ESTER           | 0.02         |              |               |
| 91    | 36.48    | TERPENIC ESTER           | 0.04         |              |               |
| 92    | 38.58    | ALIPHATIC COMPOUND       | 0.02         |              |               |
| 93    | 39.04    | GERANYLLINALOOL          | 0.02         |              |               |
| 94    | 43.88    | AROMATIC COMPOUND Mw=284 | 0.15         |              |               |
|       |          | <b>TOTAL</b>             | <b>99.95</b> |              | <b>8.61</b>   |

This Essential Oil is a 100% pure and natural product. It does not contain any artificial ingredients or adulteration of any kind to the best of our knowledge. The analysis and statements herein constitute the most complete information available to Eden Botanicals. This product is guaranteed by Eden Botanicals to be of excellent quality.

Eden Botanicals

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