



CERTIFICATE OF ANALYSIS
COA

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Product Name: CO₂ Total Extract

Product Use: Raw materials for industry

Scientific Name: *Geranium robertianum*

Country of origin: Albania

Company Name: Esencial®

CAS Number: 84650-11-3

INCI Name: *Geranium robertianum* CO₂ Total Extract

Lot # TOT 191019

Batch # 191011-C

Manufacturing Date- 11.10.2019

Best Before Date- 11.10.2028

Part Used: Leaf and Flower

Extraction Method: SCFE CO₂

Quality: 100% Pure and Natural



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| PROPERTIES | SPECIFICATIONS | RESULTS | METHOD |
|--------------------------|--|----------------|------------------|
| Appearance: | Dark brown | CONFORMS | Visual |
| Physical state | Solid | CONFORMS | Organoleptic |
| Odor: | Natural and fresh fragrance | CONFORMS | Organoleptic |
| Relative Density (g/ml): | - | 1.224 at 20°C | ISO 279:1998 (E) |
| Solubility: | Soluble in lipophilic fluids such as essential oils and vegetable oils. | CONFORMS | |
| Avid Value: | - | 28.3 | ISO 124:1999 (E) |
| Flash Point: | - | > 123 °C | |
| Boiling point: | - | 98 °C | ISO/TR 11018 (E) |
| Melting point : | - | 63 °C | |
| Loss of drying: | ≤5.0% | 0.32 % | ISO 212:2007(E) |
| Residual Solvents: | no | CONFORMS | GC-FID |
| Total ashes: | - | 3.2% | WHO |
| Shelf life: | | 9 years | |
| Storage: | Keep in tightly closed container in a cool and dry place, protected from sunlight. These are best stored in the refrigerator 2 - 10°C. | | |



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COMPONENTS Range %

| | | | |
|-----------------------|--------------------------------|----------|--------|
| Identification | Conforms to reference standard | CONFORMS | GC-FID |
|-----------------------|--------------------------------|----------|--------|

| | <u>Compound</u> | <u>%</u> |
|----|------------------------|-----------------|
| 1 | Nonanol | 1.03 |
| 2 | Decanol | 1.26 |
| 3 | Terpineol | 3.33 |
| 4 | Myrcene | 1.65 |
| 5 | Nonanoic Acid | 0.62 |
| 6 | Decanoic Acid | 1.36 |
| 7 | Phytol | 3.21 |
| 8 | Germoncene | 15.39 |
| 9 | Geraniol | 4.44 |
| 10 | Linalol | 34.67 |
| 11 | Limonene | 6.71 |
| 12 | Terpinene | 21.07 |
| 13 | Borneol | 1.87 |
| 14 | Linoleic Acid | 1.95 |
| 15 | Farnesyl acetone | 1.44 |

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| HEAVY METAL TESTS | SPECIFICATIONS | RESULTS | METHOD |
|--------------------------|-----------------------|----------------|-------------------------------|
| Lead (Pb) | ≤5.0 ppm | 0.27 ppm | ISO 11212 Spectrofotometry |
| Cadmium (Cd) | ≤1.0 ppm | 0.02 ppm | |
| Arsenic (As) | ≤1.5 ppm | 0.03 ppm | |
| Mercury (Hg) | ≤0.1 ppm | <0.05 ppm | |

| MICROBIAL ANALYSIS | SPECIFICATIONS | RESULTS | METHOD |
|--------------------------------|-----------------------|----------------|---------------|
| Bacterial Count | | | |
| <i>Staphylococcus aureus</i> | < 1000 CFU/g | CONFORMS | ISO 21149 |
| <i>Escherichia coli</i> | < 1000 CFU/g | CONFORMS | |
| <i>Pseudomonas aeruginosae</i> | < 1000 CFU/g | CONFORMS | |
| Yeast and Mould | | | |
| <i>Candida albicans</i> | < 100 CFU/g | CONFORMS | ISO 16212 |
| <i>Aspergillus fumigatus</i> | < 100 CFU/g | CONFORMS | |

| | | | |
|---|------------------|--------------|----------|
| BaP | Limit 0.18 µg/kg | NOT DETECTED | Ph. Eur. |
| TOTAL PAHs (BaP, BaA, BbF, CHR) | Limit 0.2 µg/kg | NOT DETECTED | Ph. Eur. |
| PESTICIDES | Limit 0.01 mg/kg | NOT DETECTED | Ph. Eur. |
| AFLATOXINS B1 | Limit 2 µg/kg | CONFORMS | Elisa |
| TOTAL AFLATOXIN (B1, B2, G1, G2) | Limit 4 µg/kg | CONFORMS | Elisa |



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COMMENTS

This CO₂ total extract 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 Esencial®. This product is guaranteed by to Esencial® be of excellent quality.

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