



## CERTIFICATE OF ANALYSIS (COA)

**Aromology Trading LLC**  
G05 Al Ghazal Building  
Nadd Al Hamar  
Dubai, United Arab Emirates

**Website:** [www.aromology.com](http://www.aromology.com)  
**Email:** [info@aromology.com](mailto:info@aromology.com)  
**Telephone:** +971 505197601

### PRODUCT IDENTIFICATION

| Parameter         | Details                                                               |
|-------------------|-----------------------------------------------------------------------|
| Product Name      | Orange Leaf Absolute                                                  |
| Alternative Names | Bitter Orange Leaf Absolute; Petitgrain Absolute; Orange Leaf Extract |
| Botanical Name    | <i>Citrus aurantium</i> L. var. <i>amara</i>                          |
| Botanical Family  | Rutaceae                                                              |
| Plant Part        | Leaves and young twigs                                                |
| INCI Name         | Citrus Aurantium Amara Leaf Extract                                   |
| CAS Number        | 8014-17-3                                                             |
| Country of Origin | Tunisia                                                               |
| Extraction Method | Solvent extraction followed by ethanol purification                   |
| Product Type      | Natural Complex Substance / Botanical Absolute                        |
| Quality           | Professional Perfumery Grade                                          |
| Batch Number      | OLA-TN-2607                                                           |

### ORGANOLEPTIC ANALYSIS

| Test           | Specification                                                | Representative Result |
|----------------|--------------------------------------------------------------|-----------------------|
| Appearance     | Viscous liquid or soft mobile paste                          | Conforms              |
| Colour         | Amber, olive-green to greenish brown                         | Conforms              |
| Odour          | Characteristic green, leafy, bitter citrus, floral and woody | Conforms              |
| Odour Strength | Strong, diffusive and persistent                             | Conforms              |
| Texture        | Smooth and homogeneous                                       | Conforms              |
| Foreign Matter | Free from visible foreign material                           | Conforms              |
| Olfactive      | Corresponds to approved Orange Leaf Absolute                 | Conforms              |



Identity                      reference

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## PHYSICO-CHEMICAL ANALYSIS

| Test                        | Specification                                      | Representative Result |
|-----------------------------|----------------------------------------------------|-----------------------|
| Relative Density at 20 °C   | 0.900–0.960                                        | 0.927                 |
| Refractive Index at 20 °C   | 1.465–1.495                                        | 1.478                 |
| Acid Value                  | Maximum 15.0 mg KOH/g                              | 5.9 mg KOH/g          |
| Water Content               | Maximum 1.0%                                       | 0.36%                 |
| Flash Point                 | Minimum 60 °C                                      | 72 °C                 |
| Solubility in Water         | Insoluble                                          | Conforms              |
| Solubility in Ethanol       | Soluble to partially soluble                       | Conforms              |
| Residual Extraction Solvent | Within commercial specification                    | Conforms              |
| Chromatographic Identity    | Consistent with representative orange-leaf profile | Conforms              |
| Added Carrier or Diluent    | None intentionally added                           | Conforms              |
| Added Synthetic Fragrance   | None intentionally added                           | Conforms              |

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## REPRESENTATIVE CONSTITUENT PROFILE

Orange Leaf Absolute is a natural extract whose composition varies according to botanical material, climate, harvest and processing conditions.

| Representative Constituent | Indicative Commercial Range |
|----------------------------|-----------------------------|
| Linalool                   | 15.0–40.0%                  |
| Linalyl Acetate            | 8.0–30.0%                   |
| Alpha-Terpineol            | 2.0–12.0%                   |
| Geranyl Acetate            | 1.0–8.0%                    |
| Geraniol                   | 0.5–6.0%                    |
| Nerol                      | 0.2–4.0%                    |
| Limonene                   | 0.5–6.0%                    |
| Beta-Pinene                | 0.2–5.0%                    |
| Alpha-Pinene               | 0.1–3.0%                    |
| Terpinyol Acetate          | 0.2–5.0%                    |
| Citronellol                | Trace–2.0%                  |
| Farnesol                   | Trace–1.0%                  |
| Citral                     | Trace–1.0%                  |



Natural waxes, pigments and non-volatiles Balance

These values are representative working ranges and are not batch-specific analytical results.

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## PURITY AND QUALITY STATUS

| Assessment                        | Status                   |
|-----------------------------------|--------------------------|
| Botanical Identity                | Conforms                 |
| Tunisian Origin                   | Conforms                 |
| Natural Botanical Extract         | Conforms                 |
| Added Carrier Oil                 | None intentionally added |
| Added Artificial Colour           | None intentionally added |
| Added Preservative                | None intentionally added |
| Added Synthetic Fragrance         | None intentionally added |
| Animal-Derived Material           | None                     |
| GMO Material                      | Not intentionally used   |
| BSE/TSE Risk                      | Not applicable           |
| Professional Perfumery Grade      | Yes                      |
| Suitable for Internal Consumption | No                       |

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## MICROBIOLOGICAL GUIDANCE

Significant microbial growth is not normally expected because of the extraction process and low water activity.

| Test                          | Representative Limit |
|-------------------------------|----------------------|
| Total Aerobic Microbial Count | Maximum 1,000 CFU/g  |
| Yeast and Mould               | Maximum 100 CFU/g    |
| <i>Escherichia coli</i>       | Absent               |
| <i>Salmonella</i> spp.        | Absent               |
| <i>Staphylococcus aureus</i>  | Absent               |

Microbiological compliance requires batch-specific testing where necessary for the intended application.

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## STORAGE CONDITIONS



Store:

- In the original tightly sealed container
- At 5–20°C
- Protected from direct sunlight, excessive heat, air and moisture
- Away from strong oxidising agents
- With minimum container headspace where practical

The material may become more viscous at low temperatures. Allow the closed container to return gradually to room temperature and mix gently before use.

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## **SHELF LIFE**

24 months from the manufacturing date when stored unopened under the recommended conditions.

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## **CONCLUSION**

The representative organoleptic and physicochemical results conform to Aromology Trading LLC's commercial working specification for:

### **Orange Leaf Absolute (Tunisia)**

This certificate contains representative commercial values because original batch laboratory data were not supplied. It is not a substitute for a manufacturer-issued batch Certificate of Analysis, chromatogram or independent laboratory report.

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## **AUTHORISED BY**

Fozia Khot

Director

Aromology Trading LLC