



CERTIFICATE OF ANALYSIS (COA)

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PRODUCT INFORMATION

Item	Details
Product Name	Grapefruit Oil
Alternative Names	Grapefruit Essential Oil 5X; Concentrated Grapefruit Oil; Folded Grapefruit Oil
Botanical Name	<i>Citrus paradisi</i> Macfad.
INCI Name	Citrus Paradisi Peel Oil
CAS Number	8016-20-4
EC Number	289-904-6
Plant Part	Fruit peel
Initial Extraction Method	Expression / cold pressing
Further Processing	Controlled concentration through partial removal of volatile terpene fractions
Product Type	Concentrated natural citrus oil / Natural Complex Substance
Issue Date	17 July 2026
Recommended Retest Period	24 months from production date

ORGANOLEPTIC AND PHYSICAL ANALYSIS

Parameter	Specification	Representative Result	Status
Appearance	Clear to slightly hazy mobile liquid	Clear mobile liquid	Pass
Colour	Yellow-brown to orange-brown	Golden orange-brown	Pass
Odour	Strong, concentrated grapefruit peel; fresh, bitter-citrus and characteristic	Characteristic	Pass
Relative Density at 20 °C	0.860–0.910	0.875	Pass
Refractive Index at 20 °C	1.4700–1.5000	1.4836	Pass



Optical Rotation at 20 °C	+65 ° to +100 °	+82.4 °	Pass
Flash Point	Approximately 50–65 °C	54 °C	Pass
Solubility in Water	Insoluble	Complies	Pass
Solubility in Alcohol	Soluble or dispersible	Complies	Pass
Acid Value	Maximum 5.0 mg KOH/g	1.7 mg KOH/g	Pass
Peroxide Value	Maximum 20 meq O ₂ /kg	5.8 meq O ₂ /kg	Pass
Added Solvents or Carrier Oils	Not permitted unless declared	Not detected	Pass
Foreign Matter	Free from visible contamination	None observed	Pass

REPRESENTATIVE GC–MS PROFILE

Constituent	Indicative Range	Representative Result
d-Limonene	55–90%	72.40%
Beta-Myrcene	1–10%	4.80%
Alpha-Pinene	0.2–3.0%	1.20%
Beta-Pinene	0.2–3.0%	0.90%
Sabinene	0.2–3.0%	0.80%
Linalool	0.2–5.0%	1.40%
Nootkatone	0.1–5.0%	1.80%
Decanal	0.1–3.0%	0.70%
Octanal	0.1–2.0%	0.35%
Citral, expressed as Geranial and Neral	Trace–2.0%	0.45%
Other Naturally Occurring Constituents	Balance	Balance

FOLDING QUALIFICATION

“Five fold” describes a concentrated grapefruit oil produced by removing a portion of the more volatile terpene fraction.

It does not mean that every naturally occurring constituent is present at exactly five times the concentration found in the original expressed oil.

The concentration process may increase the relative level of:

- Oxygenated citrus constituents
- Nootkatone
- Aldehydes
- Fragrance allergens
- Non-volatile residues
- Naturally occurring furocoumarins



FUROCUMARIN STATUS

Parameter	Result
Bergapten / 5-MOP	Batch-specific analysis required
Total Furocoumarins	Batch-specific analysis required
Phototoxicity Status	Not certified by this representative COA
Furocoumarin-Reduced or FCF Status	Must not be claimed without producer documentation

PURITY DECLARATION

The material is declared to be:

- A concentrated natural grapefruit peel oil.
- Produced from expressed or cold-pressed grapefruit peel oil.
- Free from intentionally added synthetic fragrance materials.
- Free from intentionally added carrier oils and diluents unless declared.
- Intended for professional perfumery, fragrance and cosmetic formulation.
- Subject to batch-specific allergen and phototoxicity assessment.

CONCLUSION

THE REPRESENTATIVE MATERIAL COMPLIES WITH THE ABOVE SPECIFICATIONS

Store tightly closed in a cool, dry and well-ventilated location, protected from heat, direct sunlight and prolonged exposure to air.

The analytical values shown are representative and must not be presented as actual batch results without supporting laboratory analysis.

Authorised by:
Fozia Khot
Director