



CERTIFICATE OF ANALYSIS (COA)

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PRODUCT INFORMATION

Product Information	Details
Product Name	Marjoram Essential Oil
Botanical Name	<i>Origanum majorana</i> L.
Botanical Synonym	<i>Majorana hortensis</i> Moench
INCI Name	Origanum Majorana Flower Oil
CAS Number	8015-01-8
EC Number	282-004-4
FEMA Number	2663
Country of Origin	Egypt
Plant Part Used	Flowering aerial parts
Extraction Method	Steam distillation
Product Type	100% natural essential oil
Batch Number	MOE-260521

Organoleptic and Physicochemical Analysis

Test	Specification	Batch Result
Appearance	Clear mobile liquid	Conforms
Colour	Pale yellow to yellow-green	Conforms
Odour	Characteristic, warm, sweet-herbaceous and mildly spicy	Conforms
Relative Density at 20°C	0.880–0.910	0.894
Refractive Index at 20°C	1.465–1.480	1.472
Optical Rotation at 20°C +10° to +25°		+17.6°



Solubility	Soluble in alcohol; insoluble in water	Conforms
Flash Point	Minimum 54 °C	57 °C
Acid Value	Maximum 2.0 mg KOH/g	0.8 mg KOH/g
Peroxide Value	Maximum 10.0 meq O ₂ /kg	2.4 meq O ₂ /kg
Specific Odour Assessment	Matches approved reference standard	Conforms
Adulteration Check	No evidence of adulteration	Conforms

Typical GC/MS Composition

Constituent	Specification	Batch Result
Terpinen-4-ol	18.00–32.00%	24.80%
cis-Sabinene hydrate	5.00–18.00%	11.40%
γ-Terpinene	4.00–14.00%	8.60%
α-Terpinene	2.00–10.00%	5.70%
Sabinene	2.00–10.00%	5.20%
trans-Sabinene hydrate	2.00–8.00%	4.10%
α-Terpineol	1.00–7.00%	3.60%
Linalool	1.00–8.00%	3.20%
Terpinolene	1.00–5.00%	2.50%
β-Caryophyllene	0.50–4.00%	1.80%
Limonene	0.20–4.00%	1.30%
β-Pinene	0.20–4.00%	1.20%
α-Pinene	0.10–3.00%	0.80%
p-Cymene	0.10–4.00%	0.70%

Microbiological and Contaminant Status

Parameter	Requirement	Result
Total Aerobic Microbial Count	≤1,000 CFU/g	Conforms
Yeast and Mould	≤100 CFU/g	Conforms
<i>Escherichia coli</i>	Absent	Conforms
<i>Salmonella</i> spp.	Absent	Conforms
Heavy Metals	Complies with applicable requirements	Conforms
Residual Solvents	Not expected from steam distillation	Conforms
Pesticide Residues	Complies with applicable requirements	Conforms



Storage and Shelf Life

Store in a tightly closed, preferably full container in a cool, dry and well-ventilated area. Protect from direct sunlight, heat, air and sources of ignition.

Recommended storage temperature: 15–25°C

Shelf life: 24 months from the manufacturing date when stored under the recommended conditions.

Conclusion

The batch identified above conforms to Aromology's specification for Marjoram Essential Oil – Egypt and is suitable for professional fragrance and cosmetic formulation, subject to the formulator's safety assessment and applicable regulations.

Authorised by:

Fozia Khot
Director