

**CERTIFICATE OF ANALYSIS
COA**

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Product Name:	Calendula officinalis CO ₂ Total Extract
Product Use:	Raw materials for industry
Scientific Name:	<i>Calendula officinalis</i>
Country of origin:	Albania
Company Name:	Esencial®
INCI Name:	<i>Calendula officinalis</i> flower Extract
Part Used:	Flower
Extraction Method:	SCFE CO ₂
Extraction Solvent:	CO ₂ , none remaining in the extract
Quality:	100% Pure and Natural
Preservatives:	None
Storage:	In a cool, dry, ventilated place, away from light, in the aluuminumtainers, tightly closed. These are best stored in the refrigerator 2 – 10°C.

Secondare metabolites	Rezults	Method
<i>Polyphenols</i>	<i>35 mg/gr extract</i>	<i>HPLC</i>
<i>Flavonoids</i>	<i>32 mg/gr extract</i>	<i>HPLC</i>
<i>Rutin</i>	<i>4,8 mg/gr extract</i>	<i>HPLC</i>
<i>Nicotiflorin</i>	<i>0,6 mg/gr extract</i>	<i>HPLC</i>
<i>Phenolic acid</i>		
<i>Salicylic acid</i>	<i>0,5 ng/gr extract</i>	<i>HPLC</i>
<i>Caffeic acid</i>	<i>0,6 ng/gr extract</i>	<i>HPLC</i>
<i>Ferulic acid</i>	<i>0,6 ng/gr extract</i>	<i>HPLC</i>

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PROPERTIES	SPECIFICATIONS	RESULTS	METHOD
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Appearance:	Dark brown	CONFORMS	Visual
Physical state	Solid	CONFORMS	Organoleptic
Odor:	Natural and fresh fragrance	CONFORMS	Organoleptic
Relative Density (g/ml):	-	1.19 at 20°C	ISO 279:1998 (E)
Solubility:	Soluble in lipophilic fluids such as essential oils and vegetable oils.	CONFORMS	
Flash Point:	-	> 130 °C	ISO/TR 11018 (E)
Boiling point:	-	110 °C	
Melting point :	-	65 °C	
Loss of drying:	≤5.0%	0.25%	ISO 212:2007(E)
Residual Solvents:	no	CONFORMS	GC-FID
Total ashes:	-	2.5%	WHO
Shelf life:		9 years	

COMPONENTS Range %

Identification	Conforms to reference standard	CONFORMS	GC-FID
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	Volatile Compound	%
1	γ-Murolene	2.20
2	b-Ionone	0.98
3	Ledene	1.08
4	α-Murolene	1.97
5	Cadinene	4.26
6	l-Cadinene	19.60
7	α-Cadinene	4.76
8	Ledane	2.28
9	Ledol	5.18
10	Cubenole	3.58
11	Cadinole	10.05
12	α-Cadinol	22.52
13	Heptadecane	18.15
14	Octadecane	1.37
15	Nonadecane	2.01

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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 aeroginosae</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	Elissa
TOTAL PAHs (BaP, BaA, BbF,CHR)	Limit 0.2 µg/kg	NOT DETECTED	Elissa
PESTICIDES	Limit 0.01 mg/kg	NOT DETECTED	Elissa
AFLATOXINS B1	Limit 2 µg/kg	CONFORMS	Elissa
TOTAL AFLATOXIN (B1, B2, G1, G2)	Limit 4 µg/kg	CONFORMS	Elissa

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.

DISCLAIMER: Please refer to all relevant technical information specific to the product, prior to use. The information contained in this document is obtained from current and reliable sources Esencial® provides the information contained herein, but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose.

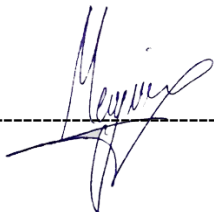
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Production pharmacist in ESENCIAL®

Biochemist in ESENCIAL®

Signature-----



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