

Nº de Muestra: A / 4749 

Identificación del Cliente

Nombre Fiscal	Arboles Ecológicos SL	Dirección	
Nombre Cial.		Cortapalillos, 1	
Teléfonos		San Felices	
Fax		SORIA 42113 (España)	

Identificación de la muestra

Producto	Lavanda (mezcla de orígenes) Ac.Es.	Fecha Recepción	07/09/2022 11:10
Tipo de producto	Aceites Esenciales	Fecha Emisión Informe	29/09/2022 15:41
Nombre Botánico	<i>Lavandula angustifolia</i>	Norma/Especificación	Basado en ISO 3515:2002
Lote	20220907		
Referencia cliente	Aceite esencial de lavanda (LAVANDA MAILLETE)		

Documentación Técnica Aceites Esenciales (FDS, FT, Alérgenos, IFRA)

Análisis Cromatográfico

Caracterización de Aceites Esenciales

Method: Internal + ISO 7609

Technique: GC-FID + GC-MS.

Components are identified by GC-MS being processed by "Total Ion Chromatogram" mode, and quantified by GC-FID, using the relative area percentage.

Coelutions are resolved by a deconvolution algorithm or by injection in a secondary apolar column, applying ratios to the primary values. The chromatogram and RT information showed in the report come from the primary polar column.

Operating Conditions:

PRIMARY EQUIPMENT (POLAR COLUMN): GC (FID) 8890 / MS 5977B. Column: DB_WAX UI 60m x 0.25mm x 0.5 µm. Carrier gas: Helium.

Injection: 0.1 µl (FID), 0.2 µl (MSD). Split 100:1. Mass Range: 33 to 350.

Temperature Program: 6 min at 50°C -> 2°C/min to 190°C -> 4°C/min to 220°C -> 10 min at 220°C -> 4°C/min to 240°C -> 10 min at 240°C

SECONDARY EQUIPMENT (APOLAR COLUMN): GC (FID) 7820A / MS 5977B. Column: HP-5MS Ultra Inert 60m x 0.25mm x 0.25 µm. Carrier gas: Helium.

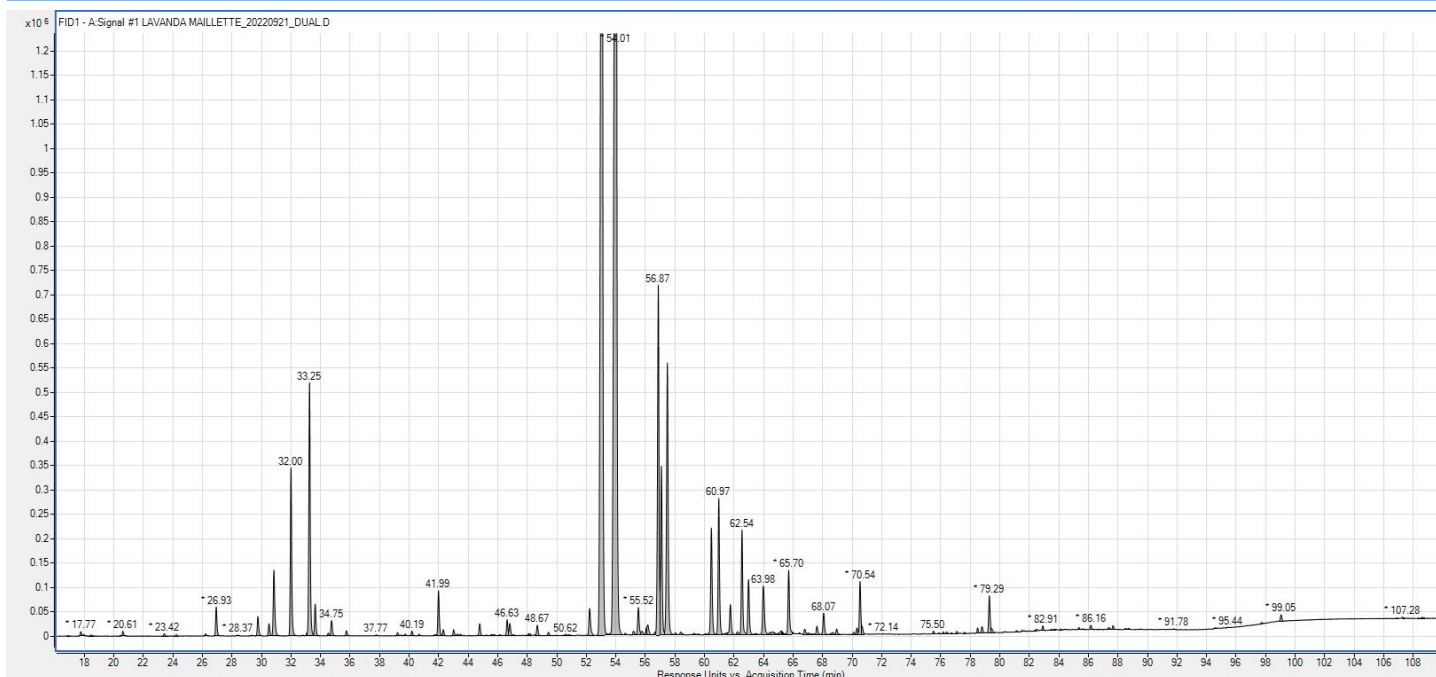
Injection: 1 µl. Split 200:1. Flow rate 1ml/min.

Temperature Program: 0 min at 50°C -> 3°C/min to 220°C -> 10°C/min to 300°C -> 10 min at 300°C.

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Cromatograma





Análisis Físico-Químico


Pruebas/Ensayos	Resultados	Unidades	Especificación	Metodología	P.N.T.
Densidad Relativa (20/20)	0.888		0.879 - 0.890	UNE 84156	1.00-N8.5
Indice de Refracción (20°C)	1.463		1.457 - 1.466	ISO 280	2.00-N8.5
Rotación Óptica (20°C)	-7.8	º	-11.50 / -6.80	ISO 592	3.00-N8.5

Análisis Cromatográfico

TR	Componentes	Nº Cas	% (Relativo)	Especificación	Familia Química	Restricción IFRA
8.59	Acetone	67-64-1	0.03		Aliphatic ketone	
10.73	Ethyl Acetate	141-78-6	0.03		Aliphatic ester	
13.71	Methyl Hexyl Ether	4747-07-3	0.02		Aliphatic ether	
17.77	Alpha-Pinene	80-56-8	0.06		Monoterpene	
17.95	Alpha-Thujene	2867-05-2	0.03		Monoterpene	
20.61	Camphene	79-92-5	0.07		Monoterpene	
23.42	Beta-Pinene	127-91-3	0.03		Monoterpene	
24.23	Sabinene	3387-41-5	0.02		Monoterpene	
26.21	Delta-3-Carene	13466-78-9	0.03		Monoterpene	
26.93	Beta-Myrcene	123-35-3	0.40		Monoterpene	
28.37	Alpha-Terpinene	99-86-5	0.01		Monoterpene	

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29.75	Limonene	5989-27-5	0.29	Máx. 1.00	Monoterpene	Cosmetic Allergen
30.5	Beta-Phellandrene	555-10-2	0.18	Tr. - 1.00	Monoterpene	
30.84	1,8-Cineole	470-82-6	1.05	Max 2.50	Monoterpenic ether	
32	Cis-Beta-Ocimene	3338-55-4	2.35	2.00 - 10.00	Monoterpene	
33.1	Gamma-Terpinene	99-85-4	0.03		Monoterpene	
33.25	Trans-Beta Ocimene	3779-61-1	3.60	0.50 - 6.00	Monoterpene	
33.63	3-Octanone	106-68-3	0.43	Tr. - 5.00	Aliphatic ketone	
34.51	m-Cymene	535-77-3	0.04		Monoterpene	
34.75	Hexyl Acetate	142-92-7	0.07		Aliphatic ester	
34.76	Para-Cymene	99-87-6	0.16		Monoterpene	
35.76	Alpha-Terpinolene	586-62-9	0.08		Monoterpene	
37.77	Cis-3-Hexenyl Acetate	3681-71-8	0.01		Aliphatic ester	
39.21	Octan-3-yl Acetate	4864-61-3	0.05		Aliphatic ester	
39.74	Hexyl Isobutyrate	2349-07-7	0.03		Aliphatic ester	
40.19	n-Hexanol	111-27-3	0.07		Aliphatic alcohol	
41.98	1-Octen-3-yl Acetate	2442-10-6	0.62		Monoterpenic ester	Dermal Sensitization
42.31	Cis-3-Hexenol	928-96-1	0.07		Aliphatic alcohol	
43.01	3-Octanol	589-98-0	0.09		Aliphatic alcohol	
44.77	Hexyl Butyrate	2639-63-6	0.18		Aliphatic ester	
46.63	1-Octen-3-ol	3391-86-4	0.20		Aliphatic alcohol	
46.82	Cis-Linalool Oxide (Furanoid)	5989-33-3	0.17		Monoterpenic epoxide	
48.16	Trans-Sabinene Hydrate	17699-16-0	0.03		Monoterpenic alcohol	
48.67	Trans-Linalool Oxide (Furanoid)	34995-77-2	0.17		Monoterpenic epoxide	
49.44	Myroxide Isomer	28977-57-3	0.04		Monoterpenic epoxide	
50.61	Alpha-Copaene	3856-25-5	0.03		Sesquiterpene	
52.22	Camphor	76-22-2	0.44	Tr. - 0.60	Monoterpenic ketone	
53.06	Linalool	78-70-6	28.73	20.00 - 38.00	Monoterpenic alcohol	Cosmetic Allergen
54.01	Linalyl Acetate	115-95-7	34.93	25.00 - 45.00	Monoterpenic ester	
54.65	Trans-Para-Menth-2-en-1-ol	29803-82-4	0.02		Monoterpenic alcohol	
55.19	Cis-Alpha-Bergamotene	18252-46-5	0.06		Sesquiterpene	
55.52	Alpha-Santalene	512-61-8	0.41		Sesquiterpene	

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55.77	Bornyl Formate	7492-41-3	0.05		Monoterpenic ester	
56.08	Bornyl Acetate	76-49-3	0.13		Monoterpenic ester	
56.16	Trans-Alpha Bergamotene	13474-59-4	0.13		Sesquiterpene	
56.87	Lavandulyl Acetate	25905-14-0	5.33	Min. 1.00	Monoterpenic ester	
57.08	Terpinen-4-ol	562-74-3	2.34	1.20 - 6.00	Monoterpenic alcohol	
57.49	Trans-Beta Caryophyllene	87-44-5	4.55		Sesquiterpene	
58.03	Hexyl Tiglate	16930-96-4	0.03		Aliphatic ester	
58.39	Bisabolene Isomer	70332-15-9	0.04		Sesquiterpene	
59.28	Beta-Santalene	511-59-1	0.03		Sesquiterpene	
60.47	Trans-Beta Farnesene	18794-84-8	1.63		Sesquiterpene	
60.97	Lavandulol	498-16-8	1.94	Mín 0.10	Monoterpenic alcohol	
61.75	Alpha-Humulene	6753-98-6	0.16		Sesquiterpene	
61.8	Cryptone	500-02-7	0.33		Aliphatic ketone	
62.23	Farnesene Isomer	502-61-4	0.04		Sesquiterpene	
62.54	Alpha-Terpineol	98-55-5	1.47	Max. 2.00	Monoterpenic alcohol	
62.98	Borneol	507-70-0	0.84		Monoterpenic alcohol	
63.98	Neryl Acetate	141-12-8	0.58		Monoterpenic ester	
64.02	Germacrene D	23986-74-5	0.32		Sesquiterpene	
64.44	Beta-Bisabolene	495-61-4	0.03		Sesquiterpene	
64.63	Phellandral	21391-98-0	0.02		Monoterpenic aldehyde	
65.18	Carvone	99-49-0	0.08		Monoterpenic ketone	Dermal Sens. and Systemic Tox.
65.7	Geranyl Acetate	105-87-3	0.95		Monoterpenic ester	
65.91	Trans-Linalool Oxide (Pyranoid)	39028-58-5	0.04		Monoterpenic epoxide	
66.79	Gamma-Cadinene	39029-41-9	0.08		Sesquiterpene	
67.62	Cuminaldehyde	122-03-2	0.12		Monoterpenic aldehyde	Dermal Sensitization
68.07	Nerol	106-25-2	0.33		Monoterpenic alcohol	
68.96	2,6-Dimethyl-3,5,7-octatriene -2-ol	206115-88-0	0.08		Monoterpenic alcohol	
70.11	Cis-Carveol	1197-06-4	0.04		Monoterpenic alcohol	
70.32	Meta-Cymen-8-ol	5208-37-7	0.08		Monoterpenic ester	
70.54	Geraniol	106-24-1	0.75		Monoterpenic alcohol	Cosmetic Allergen

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70.69	Para-Cymen-8-ol	1197-01-9	0.08		Monoterpenic alcohol	
75.5	Unknown Alcohol	-	0.05		Alcohol	
78.8	Caryophyllene Oxide (Isomer I)	1139-30-6	0.11		Sesquiterpenic epoxide	
79.29	Caryophyllene Oxide	1139-30-6	0.61		Sesquiterpenic epoxide	
80.36	Trans-Nerolidol	40716-66-3	0.01		Sesquiterpenic alcohol	
82.91	Para-Cymen-7-ol	536-60-7	0.06		Monoterpenic alcohol	Dermal Sens. and Systemic Tox.
85.35	Eugenol	97-53-0	0.04		Phenylpropanoid	Cosmetic Allergen/ S.Toxicity
86.16	Tau-Cadinol	5937-11-1	0.08		Sesquiterpenic alcohol	
87.67	Alpha-Bisabolol	23089-26-1	0.06		Sesquiterpenic alcohol	Dermal Sens. and Systemic Tox.
91.78	Caryophylladienol	104010-36-8	0.01		Sesquiterpenic alcohol	
99.05	Coumarin	91-64-5	0.10		Aromatic ester	Cosmetic Allergen/ S.Toxicity
Total Identificado (%)		99.11				
Total Area:		7.8E+6				

Conclusión

El perfil cromatográfico de la muestra corresponde con el de Lavanda Ac.Es.
A nivel olfativo, la muestra se ajusta a las especificaciones.

Checked & Approved by:

Andrea Villa
GC/MS Analyst

