

**Nº de Muestra: A / 4748** 

### Identificación del Cliente

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

### Identificación de la muestra

<b>Producto</b>	Lavandín Super Ac.Es. QT España	<b>Fecha Recepción</b>	07/09/2022 11:05
<b>Tipo de producto</b>	Aceites esenciales (Sin normas)	<b>Fecha Emisión Informe</b>	29/09/2022 15:40
<b>Nombre Botánico</b>	<i>Lavandula angustifolia mill. X lavandula latifolia medik</i>	<b>Norma/Especificación</b>	Interna
<b>Lote</b>	20220907		
<b>Referencia cliente</b>	Aceite esencial de Lavandín		

## 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.

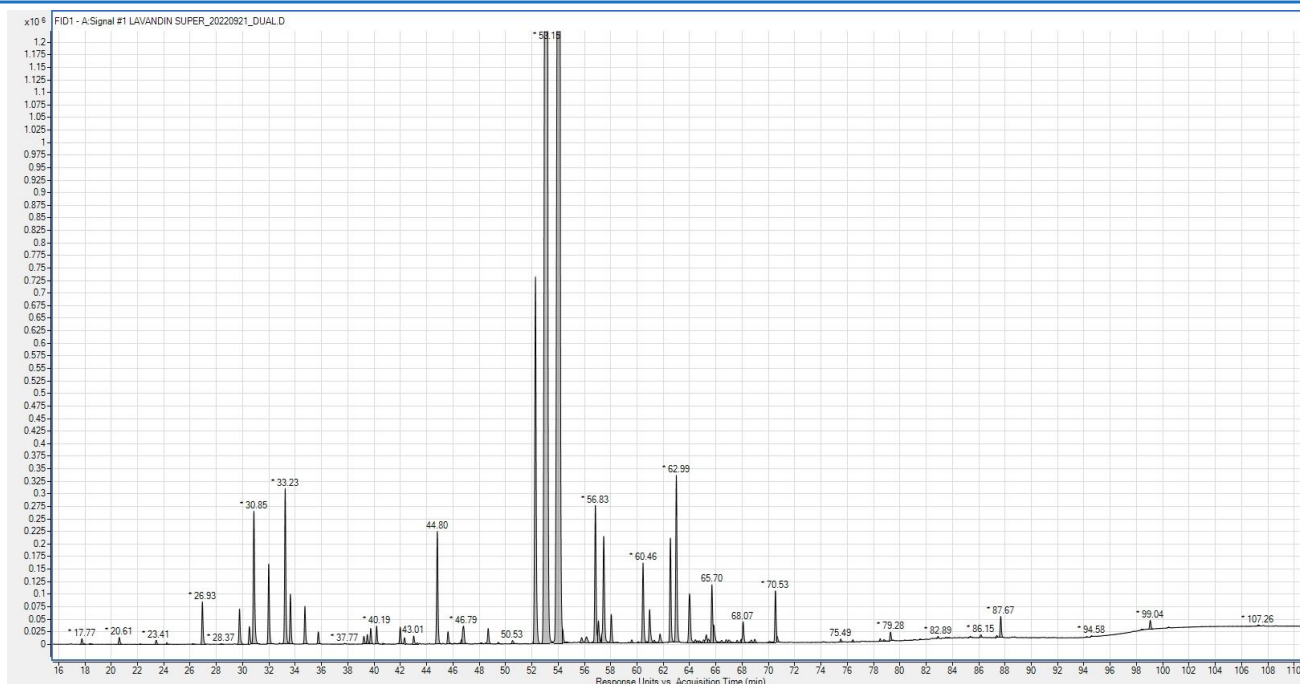
Injection: 1 µl. Split 200:1. Flow rate 1ml/min.

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)	0.887		0.886 - 0.896	UNE 84156	1.00-N8.5
Indice de Refracción (20°C)	1.456		1.456 - 1.461	ISO 280	2.00-N8.5
Rotación Óptica (20°C)	-7.8	°	-9.00 / -6.00	ISO 592	3.00-N8.5

**Análisis Cromatográfico**

TR	Componentes	Nº Cas	% (Relativo)	Especificación	Familia Química	Restricción IFRA
10.73	Ethyl Acetate	141-78-6	0.02		Aliphatic ester	
13.73	Methyl Hexyl Ether	4747-07-3	0.03		Aliphatic ether	
17.77	Alpha-Pinene	80-56-8	0.05		Monoterpene	
17.9	Alpha-Thujene	2867-05-2	<0.01		Monoterpene	
20.62	Camphene	79-92-5	0.07		Monoterpene	
23.42	Beta-Pinene	127-91-3	0.04		Monoterpene	
24.24	Sabinene	3387-41-5	0.02		Monoterpene	
26.93	Beta-Myrcene	123-35-3	0.41		Monoterpene	
29.76	Limonene	5989-27-5	0.36	0.10 - 1.50	Monoterpene	Cosmetic Allergen
30.51	Beta-Phellandrene	555-10-2	0.18		Monoterpene	
30.85	<b>1,8-Cineole</b>	<b>470-82-6</b>	<b>1.46</b>	1.20 - 10.50	Monoterpenic ether	

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31.98	Cis-Beta-Ocimene	3338-55-4	0.77	0.30 - 3.00	Monoterpene	
33.09	Gamma-Terpinene	99-85-4	0.01		Monoterpene	
33.23	<b>Trans-Beta Ocimene</b>	<b>3779-61-1</b>	<b>1.50</b>	0.40 - 3.50	Monoterpene	
33.63	3-Octanone	106-68-3	0.48	Max. 1.50	Aliphatic ketone	
34.73	Hexyl Acetate	142-92-7	0.36		Aliphatic ester	
35.75	Alpha-Terpinolene	586-62-9	0.12		Monoterpene	
39.22	Octan-3-yl Acetate	4864-61-3	0.08		Aliphatic ester	
39.48	Hexyl Propanoate	2445-76-3	0.08		Aliphatic ester	
39.74	Hexyl Isobutyrate	2349-07-7	0.16		Aliphatic ester	
40.19	n-Hexanol	111-27-3	0.17		Aliphatic alcohol	
41.98	1-Octen-3-yl Acetate	2442-10-6	0.17		Monoterpenic ester	Dermal Sensitization
42.31	Cis-3-Hexenol	928-96-1	0.07		Aliphatic alcohol	
43.01	3-Octanol	589-98-0	0.07		Aliphatic alcohol	
44.8	<b>Hexyl Butyrate</b>	<b>2639-63-6</b>	<b>1.14</b>	0.04 - 1.50	Aliphatic ester	
45.62	Hexyl 2-Methyl Butyrate	10032-15-2	0.14		Aliphatic ester	
46.76	Hexyl Isovalerate	10032-13-0	0.17		Aliphatic ester	
46.82	Cis-Linalool Oxide (Furanoid)	5989-33-3	0.14		Monoterpenic epoxide	
48.68	Trans-Linalool Oxide (Furanoid)	34995-77-2	0.17		Monoterpenic epoxide	
49.44	Myroxide Isomer	28977-57-3	0.02		Monoterpenic epoxide	
50.53	Daucene	16661-00-0	0.04		Sesquiterpene	
52.27	<b>Camphor</b>	<b>76-22-2</b>	<b>4.20</b>	3.00 - 8.50	Monoterpenic ketone	
53.15	<b>Linalool</b>	<b>78-70-6</b>	<b>41.25</b>	26.00 - 44.00	Monoterpenic alcohol	Cosmetic Allergen
54.1	<b>Linalyl Acetate</b>	<b>115-95-7</b>	<b>35.20</b>	19.00 - 45.00	Monoterpenic ester	
54.32	Sesquithujene	58319-06-5	0.10		Sesquiterpene	
55.78	Bornyl Formate	7492-41-3	0.06		Monoterpenic ester	
56.17	Trans-Alpha Bergamotene	13474-59-4	0.08		Sesquiterpene	
56.83	<b>Lavandulyl Acetate</b>	<b>25905-14-0</b>	<b>1.42</b>	0.60 - 1.50	Monoterpenic ester	
57.06	Terpinen-4-ol	562-74-3	0.20	0.01 - 3.10	Monoterpenic alcohol	
57.32	Hexyl Caproate	6378-65-0	0.06		Monoterpenic ester	
57.47	<b>Trans-Beta Caryophyllene</b>	<b>87-44-5</b>	<b>1.20</b>		Sesquiterpene	
58.04	Hexyl Tiglate	16930-96-4	0.28		Aliphatic ester	

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59.59	Cis-Beta-Farnesene	28973-97-9	0.03		Sesquiterpene	
60.46	Trans-Beta Farnesene	18794-84-8	0.84	0.45 - 1.70	Sesquiterpene	
60.96	Lavandulol	498-16-8	0.36	0.10 - 1.60	Monoterpenic alcohol	
61.31	Carota-5,8-diene	142928-08-3	0.02		Sesquiterpene	
61.75	Alpha-Humulene	6753-98-6	0.05		Sesquiterpene	
61.8	Cryptone	500-02-7	0.04		Aliphatic ketone	
62.54	<b>Alpha-Terpineol</b>	<b>98-55-5</b>	<b>1.02</b>		Monoterpenic alcohol	
62.99	<b>Borneol</b>	<b>507-70-0</b>	<b>1.74</b>	1.50 - 5.00	Monoterpenic alcohol	
63.98	Neryl Acetate	141-12-8	0.36		Monoterpenic ester	
64.02	Germacrene D	23986-74-5	0.30		Sesquiterpene	
64.44	Beta-Bisabolene	495-61-4	0.02		Sesquiterpene	
65.07	Lavandulyl Isobutyrate	51117-20-5	0.03		Monoterpenic ester	
65.26	(E,E) Alpha Farnesene	502-61-4	0.05		Sesquiterpene	
65.44	Isodaucene	142878-08-8	0.03		Sesquiterpene	
65.7	Geranyl Acetate	105-87-3	0.60		Monoterpenic ester	
65.85	Lavandulyl Isovalerate	51117-21-6	0.17		Sesquiterpenic ester	
66.43	Delta-Cadinene	483-76-1	0.03		Sesquiterpene	
66.78	Gamma-Cadinene	39029-41-9	0.03		Sesquiterpene	
67.62	Cuminaldehyde	122-03-2	0.03		Monoterpenic aldehyde	Dermal Sensitization
68.07	Nerol	106-25-2	0.22		Monoterpenic alcohol	
70.53	Geraniol	106-24-1	0.51		Monoterpenic alcohol	Cosmetic Allergen
70.69	Para-Cymen-8-ol	1197-01-9	0.04		Monoterpenic alcohol	
78.8	Caryophyllene Oxide (Isomer I)	1139-30-6	0.03		Sesquiterpenic epoxide	
79.29	Caryophyllene Oxide	1139-30-6	0.08		Sesquiterpenic epoxide	
85.35	Eugenol	97-53-0	0.02		Phenylpropanoid	Cosmetic Allergen/ S.Toxicity
86.15	Tau-Cadinol	5937-11-1	0.03		Sesquiterpenic alcohol	
87.67	Alpha-Bisabolol	23089-26-1	0.20		Sesquiterpenic alcohol	Dermal Sens. and Systemic Tox.
99.04	Coumarin	91-64-5	0.09		Aromatic ester	Cosmetic Allergen/ S.Toxicity
Total Identificado (%)		99.52				
Total Area:		8.4E+6				

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### Conclusión

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

Checked & Approved by:

**Andrea Villa**  
GC/MS Analyst

