

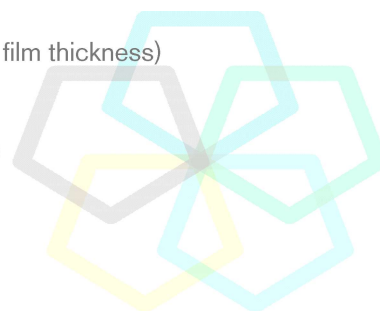


Aromatic Plant Research Center

We provide uncompromising
quality control for your products.

Customer : doTERRA International
Lot Number : 201979
Date Filled : 07/15/2020

Column : ZB5 (60 m length × 0.25 mm inner diameter × 0.25 µm film thickness)
Instrument : Shimadzu GCMS-QP2010 Ultra
Carrier gas : Helium 80 psi
Temperature ramp : 2 degrees celsius per minute up to 260-degrees celsius
Split ratio : 30:1
Sample preparation : 5%w/v solution with Dichloromethane.



Comments:

The analysis of this Melaleuca lot revealed no contaminants or adulteration.
The sample meets the expected chemical profile for authentic essential oils of Melaleuca alternifolia.

Analysied by : Ambika Poudel
Reviewed by : Dr. Prabodh Satyal



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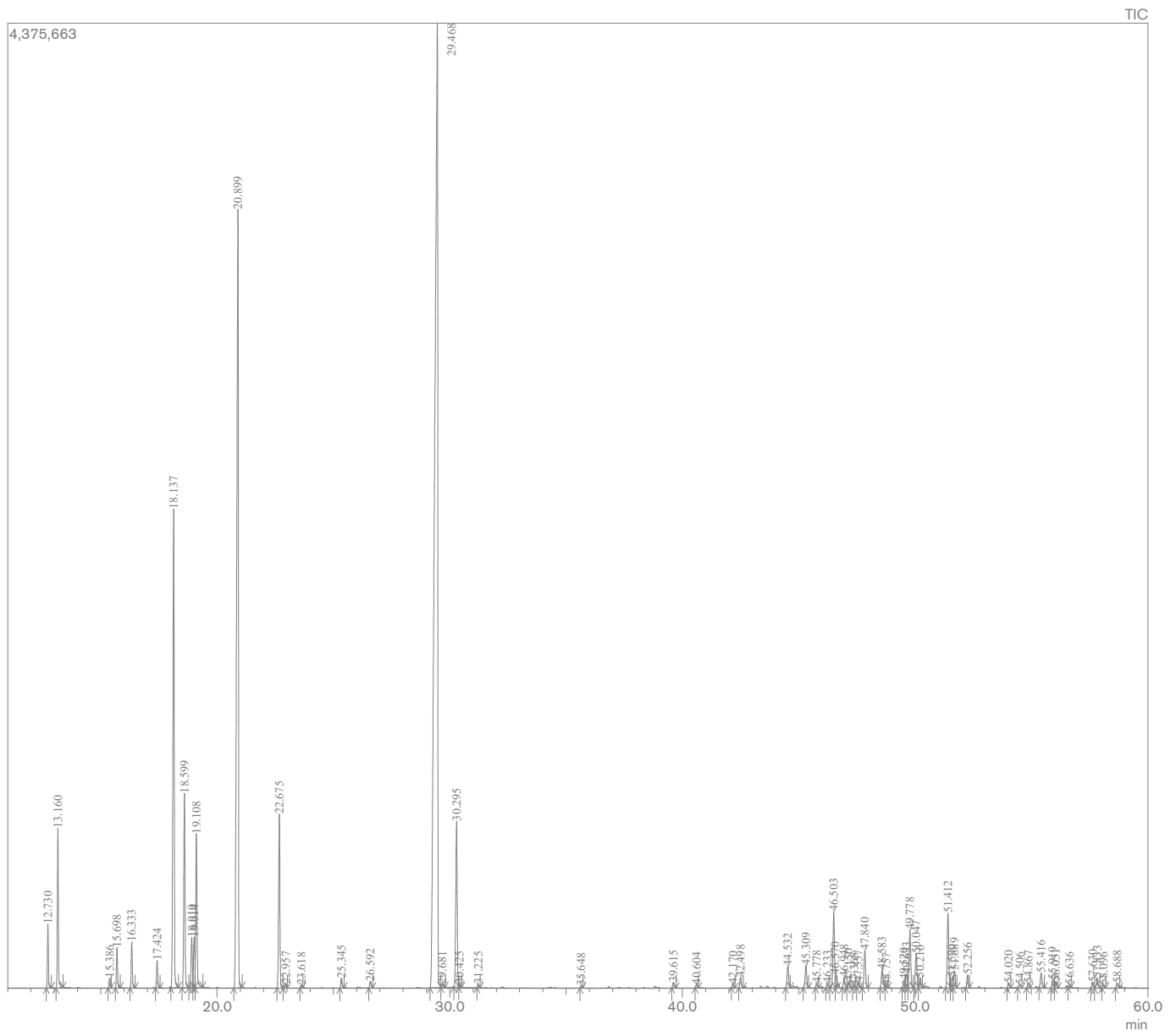
Melaleuca Essential Oil

Customer : doTERRA International

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Chromatogram



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Peak Report

Peak#	R.Time	Name	Area%
1	12.730	alpha-Thujene	0.87
2	13.160	alpha-Pinene	2.31
3	15.386	Sabinene	0.15
4	15.698	beta-Pinene	0.63
5	16.333	Myrcene	0.72
6	17.424	alpha-Phellandrene	0.45
7	18.137	alpha-Terpinene	8.67
8	18.599	para-Cymene	3.32
9	18.910	Limonene	0.83
10	19.014	beta-Phellandrene	0.82
11	19.108	1,8-Cineole	2.73
12	20.899	gamma-Terpinene	18.63
13	22.675	Terpinolene	3.11
14	22.957	para-Cymenene	0.06
15	23.618	Linalool	0.04
16	25.345	cis-para-Menth-2-en-1-ol	0.19
17	26.592	trans-para-Menth-2-en-1-ol	0.13
18	29.468	Terpinen-4-ol	41.00
19	29.681	para-Cymen-8-ol	0.08
20	30.295	alpha-Terpineol	3.28
21	30.425	cis-Piperitol	0.06
22	31.225	trans-Piperitol	0.06
23	35.648	trans-Ascaridol glycol	0.03
24	39.615	delta-Elementene	0.11
25	40.604	alpha-Cubebene	0.06
26	42.170	Isoledene	0.08
27	42.498	alpha-Copaene	0.23
28	44.532	alpha-Gurjunene	0.45
29	45.309	beta-Caryophyllene	0.50
30	45.778	9-epi-cis-Caryophyllene	0.09
31	46.233	alpha-Maaliene	0.10
32	46.503	Aromadendrene	1.58
33	46.570	Melaleuca Sesquiterpenoid 1	0.22
34	46.948	Selina-5,11-diene	0.23
35	47.150	trans-Muurola-3,5-diene	0.12
36	47.368	Velerana-7,11-diene	0.04
37	47.557	alpha-Humulene	0.10
38	47.840	allo-Aromadendrene	0.80
39	48.583	cis-Cadina-1(6),4-diene	0.44
40	48.757	trans-Cadina-1(6),4-diene	0.04
41	49.520	delta-Selinene	0.14
42	49.633	beta-Selinene	0.29
43	49.778	Viridiflorene	1.28
44	50.047	Bicyclogermacrene	0.79
45	50.216	alpha-Murolene	0.20
46	51.412	delta-Cadinene	1.56
47	51.590	trans-Calamenene	0.22
48	51.689	Zonarene	0.35
49	52.256	trans-Cadine-1,4-diene	0.25
50	54.020	Viridifloral isomer	0.10
51	54.506	Palustrol	0.09
52	54.867	Spathulenol	0.10
53	55.416	Globulol	0.34
54	55.919	Viridiflorol	0.17
55	56.051	Cubeban-11-ol	0.14
56	56.636	Rosifoliol	0.05
57	57.630	Eudesmol isomer	0.13
58	57.833	1-epi-Cubenol	0.22
59	58.096	iso-Spathulenol	0.06
60	58.688	Cubenol	0.10
			100.00

