



Aromatic Plant Research Center

We provide uncompromising
quality control for your products.

Customer : doTERRA International
Lot Number : 240313
Date Filled : 01/31/2024

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 Helichrysum lot revealed no contaminants or adulteration.
The sample meets the expected chemical profile for authentic essential oils of Helichrysum italicum.

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



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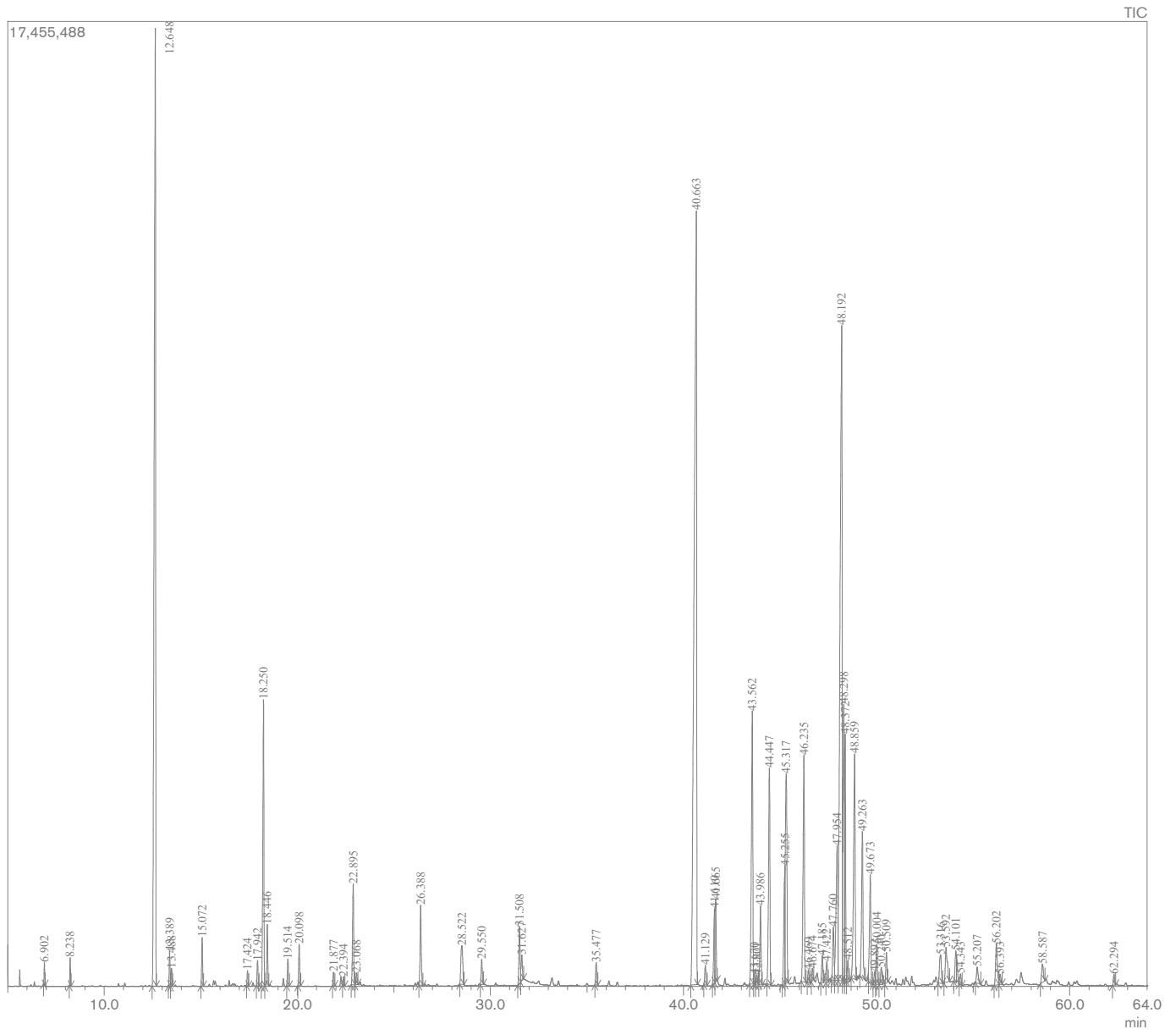
Helichrysum Essential Oil

Customer : doTERRA International

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Chromatogram



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Peak Report

Peak#	R.Time	Name	Area%
1	6.902	2-Methyl-2-heptene	0.13
2	8.238	4-Methyl-3-hexanone	0.19
3	12.648	alpha-Pinene	14.73
4	13.389	alpha-Fenchene	0.30
5	13.488	Camphene	0.15
6	15.072	beta-Pinene	0.45
7	17.424	alpha-Terpinene	0.14
8	17.942	para-Cymene	0.26
9	18.250	Limonene	3.20
10	18.446	1,8-Cineole	0.61
11	19.514	Isobutyl angelate	0.27
12	20.098	gamma-Terpinene	0.42
13	21.877	Terpinolene	0.13
14	22.394	2,4-Dimethyl-3,5-heptanedione	0.08
15	22.895	Linalool	1.19
16	23.068	2-Methyl butyl-2-methyl butyrate	0.13
17	26.388	Isoamyl tiglate	0.98
18	28.522	Terpinen-4-ol	0.75
19	29.550	alpha-Terpineol	0.30
20	31.508	Nerol	0.70
21	31.627	2,2,6-Trimethyl-3,5-heptanedione	0.34
22	35.477	Heptyl angelate	0.26
23	40.663	Neryl acetate	19.59
24	41.129	alpha-Ylangene	0.26
25	41.610	alpha-Copaene	0.93
26	41.665	iso-Italicene	0.91
27	43.562	Italicene	3.90
28	43.670	Italicene (2,11-cycloacor-3-ene)	0.10
29	43.801	epi-Italicene	0.12
30	43.986	cis-alpha-Bergamotene	0.94
31	44.447	beta-Caryophyllene	3.03
32	45.255	trans-alpha-Bergamotene	1.35
33	45.317	Italidione 1	3.34
34	46.235	Neryl propionate	3.18
35	46.469	trans-beta-Farnesene	0.15
36	46.674	alpha-Humulene	0.14
37	47.185	alpha-Acoradiene	0.34
38	47.422	beta-Acoradiene	0.26
39	47.760	Selina-4,11-diene	0.74
40	47.954	8-Decene-3,5-dione, 2,4,6,9-tetramethyl	2.44
41	48.192	gamma-Curcumene	13.97
42	48.298	Italidione 2	3.80
43	48.372	ar-Curcumene	2.55
44	48.512	trans-beta-Bergamotene	0.26
45	48.859	beta-Selinene	3.68
46	49.263	alpha-Selinene	2.07
47	49.673	Italidione 3	1.51
48	49.892	beta-Bisabolene	0.15
49	50.004	beta-Curcumene	0.52
50	50.240	gamma-Cadinene	0.25
51	50.509	delta-Cadinene	0.36
52	53.316	Italidione 4	0.54
53	53.592	Italidione 5	0.71
54	54.101	Neryl isovalerate	0.44
55	54.343	Caryophyllene oxide	0.13
56	55.207	Guaiol	0.29
57	56.202	Rosifolol	0.74
58	56.393	cis-3,7-Dimethyl-2,6-octadienyl 2-methyl crotonate	0.17
59	58.587	beta-Eudesmol	0.33
60	62.294	Geranyl hexanoate	0.13
			100.00

