

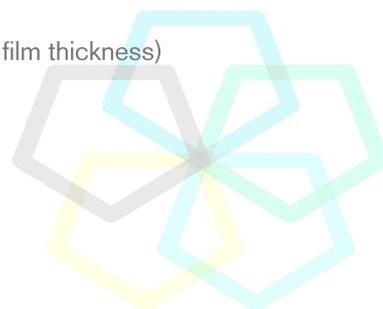


Aromatic Plant Research Center

We provide uncompromising
quality control for your products.

Customer : doTERRA International
Lot Number : 211741
Date Filled : 06/23/2021

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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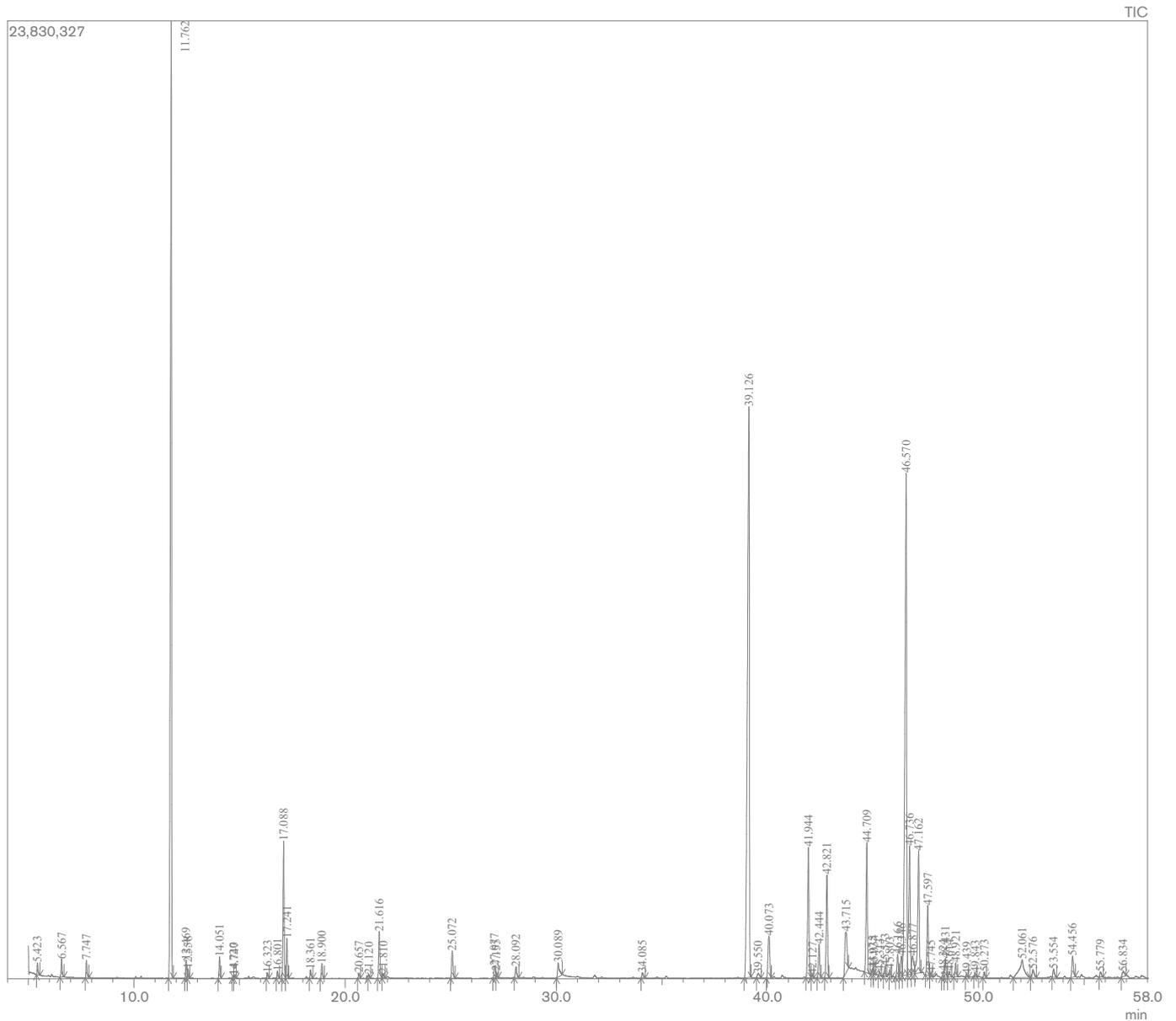
Helichrysum Essential Oil

Customer : doTERRA International

Lot Number : 211741

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Chromatogram



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Peak Report

Peak#	R.Time	Name	Area%
1	5.423	1-Hexen-3-ol+ Isobutyl acetate	0.23
2	6.567	2-Methyl-2-heptene	0.38
3	7.747	4-Methyl-3-hexanone	0.34
4	11.762	alpha-Pinene	21.84
5	12.469	alpha-Fenchene	0.34
6	12.558	Camphene	0.17
7	14.051	beta-Pinene	0.42
8	14.720	Myrcene	0.05
9	14.747	trans-Dehydroxy linalool oxide	0.06
10	16.323	alpha-Terpinene	0.12
11	16.801	para-Cymene	0.15
12	17.088	Limonene	2.79
13	17.241	1,8-Cineole	0.77
14	18.361	Isobutyl angelate	0.19
15	18.900	gamma-Terpinene	0.33
16	20.657	Terpinolene	0.11
17	21.120	2,4-Dimethyl-3,5-heptanedione	0.08
18	21.616	Linalool	1.12
19	21.810	2-Methyl butyl 2-methyl butyrate	0.10
20	25.072	Isoamyl tiglate	0.72
21	27.077	Terpinen-4-ol+Dec-1-en-3-ol	0.32
22	27.155	2,2,5,5-Tetramethyl-3,4-hexanedione	0.11
23	28.092	alpha-Terpineol	0.29
24	30.089	Nerol	0.49
25	34.085	Hexyl angelate	0.14
26	39.126	Neryl acetate	21.23
27	39.550	alpha-Ylangene	0.17
28	40.073	iso-Italicene	1.41
29	41.944	Italicene	3.37
30	42.127	Italicene (2,11-cycloacor-3-ene)	0.10
31	42.444	cis-alpha-Bergamotene	0.82
32	42.821	beta-Caryophyllene	2.64
33	43.715	Italidione 1	1.69
34	44.709	Neryl propanoate	3.22
35	44.975	trans-beta-Farnesene	0.15
36	45.034	alpha-Humulene	0.13
37	45.313	allo-Aromadendrene	0.11
38	45.573	alpha-Acoradiene	0.25
39	45.803	beta-Acoradiene	0.19
40	46.166	gamma-Gurjunene	0.53
41	46.346	Italidione 2	0.64
42	46.570	gamma-Curcumene	16.76
43	46.736	ar-Curcumene	3.91
44	46.877	trans-beta-Bergamotene	0.71
45	47.162	beta-Selinene	3.71
46	47.597	alpha-Selinene	1.83
47	47.745	alpha-Murolene	0.08
48	48.324	beta-Bisabolene	0.15
49	48.431	beta-Curcumene	0.51
50	48.614	gamma-Cadinene	0.18
51	48.921	delta-Cadinene	0.35
52	49.439	trans-gamma-Bisabolene	0.07
53	49.843	Italicene ether+Neryl butyrate	0.09
54	50.273	trans-alpha-Bisabolene	0.14
55	52.061	Italidione 3	1.64
56	52.576	Neryl isovalerate	0.29
57	53.554	Guaiol	0.26
58	54.456	epi-Eudesmol isomer	0.67
59	55.779	beta-Eudesmol	0.15
60	56.834	alpha-Eudesmol	0.22
			100.00

