



Aromatic Plant Research Center

We provide uncompromising
quality control for your products.

Customer: doTERRA International

Lot Number: 182365

Date Filled: 8/24/2018

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 Peppermint lot revealed no contaminants or adulteration.

The sample meets the expected chemical profile for authentic essential oils of *Mentha piperita*.



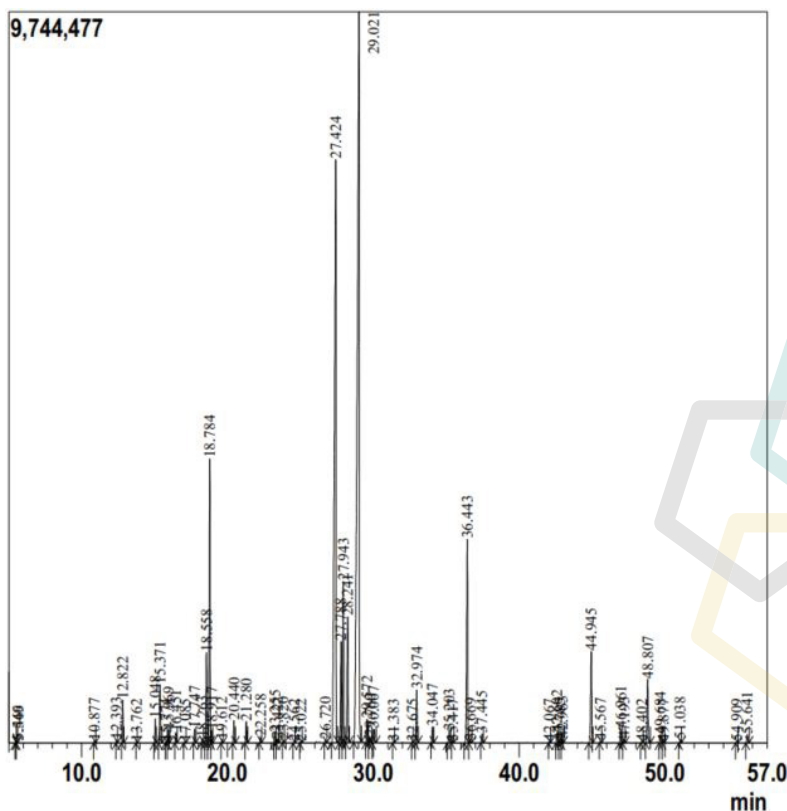
Peppermint Essential Oil

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Chromatogram



Peak Report

Ret.Time	Compound Name	Area %
5.466	Isopentyl alcohol	0.02
5.549	2-methyl-Butanol	0.02
10.877	2,5-Diethyltetrahydrofuran	0.04
12.393	alpha-Thujene	0.05
12.822	alpha-Pinene	0.73
13.762	Camphene	0.02
15.048	Sabinene	0.45
15.371	beta-Pinene	1.16
15.774	3-Octanone	0.03
15.969	Myrcene	0.24
16.451	3-Octanol	0.2
17.085	alpha-Phellandrene	0.03
17.747	alpha-Terpinene	0.28
18.263	para-Cymene	0.09
18.558	Limonene	2
18.784	1,8-Cineole	5.98
18.917	cis-beta-Ocimene	0.25
19.612	trans-beta-Ocimene	0.07
20.44	gamma-Terpinene	0.47
21.28	cis-Sabinene hydrate	0.48
22.258	Terpinolene	0.13
23.255	Linalool	0.24
23.422	2-Methylbutyl-2-methylbutyrate	0.11
23.82	2-Methylbutyl isovalerate	0.06
24.562	3-Octanol acetate	0.03
25.022	cis-para-Menth-2-en-1-ol	0.03
26.72	Isopulegol	0.08
27.424	Menthone	24.4
27.788	Menthofuran	2.3
27.943	Isomenthone	3.74
28.241	Neomenthol	3.29
29.021	Menthol	38.71
29.572	Isomenthol	0.51
29.76	Neoisomenthol	0.13
30.007	alpha-Terpinol	0.34
31.383	Menthone ox	0.02
32.675	3-cis-Hexenyl 3-methylbutanoate	0.02
32.974	Pulegone	1.26
34.047	Piperitone	0.37
35.203	Neomenthyl acetate	0.3
35.417	para-Mentha-1(7),8(10)-dien-9-ol	0.03
36.443	Menthyl acetate	5.39
36.669	Dihydroedulan	0.05
37.445	Isomenthyl acetate	0.22
42.067	alpha-Copaene	0.03
42.602	alpha-Bourbonene	0.25
42.785	beta-Bourbonene	0.05
42.963	beta-Elmene	0.09
44.945	beta-Caryophyllene	2.43
45.567	beta-Copaene	0.04
46.961	trans-beta-Farnesene	0.36
47.193	alpha-Humulene	0.09
48.402	trans-Cadina-1(6),4-diene	0.03
48.807	Germacrene D	1.63
49.684	Bicyclogermacrene	0.22
49.877	gamma-Amorphene	0.03
51.038	delta-Cadinene	0.08
54.909	Caryophyllene oxide	0.04
55.641	Viridiflorol	0.23
Area Total:		100

Comments:

The analysis of this Peppermint lot revealed no contaminants or adulteration.

The sample meets the expected chemical profile for authentic essential oils of *Mentha piperita*.

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