



## Aromatic Plant Research Center

We provide uncompromising  
quality control for your products.

**Customer** : doTERRA International  
**Lot Number** : 231733  
**Date Filled** : 06/22/2023

**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 Spearmint lot revealed no contaminants or adulteration.  
The sample meets the expected chemical profile for authentic essential oils of *Mentha spicata*.

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



© Copyright 2023 Aromatic Plant Research Center. All rights reserved. Any publishing, copying, use, dissemination, or distribution of this report, including online, without the express written permission of Aromatic Plant Research Center is strictly prohibited.

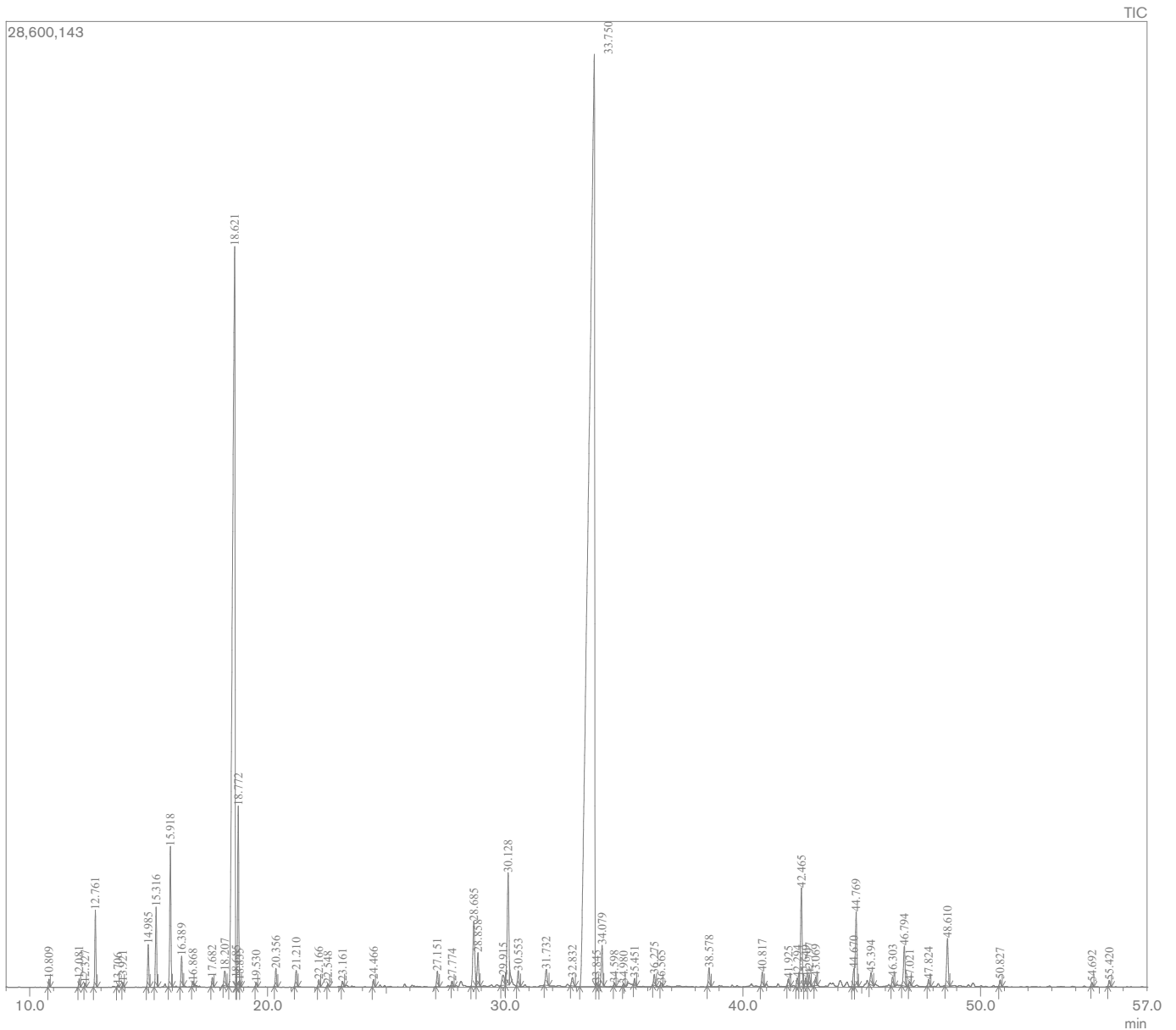
# Spearmint Essential Oil

Customer : doTERRA International

Lot Number : 231733

Date Filled : 06/22/2023

## Chromatogram



© Copyright 2023 Aromatic Plant Research Center. All rights reserved. Any publishing, copying, use, dissemination, or distribution of this report, including online, without the express written permission of Aromatic Plant Research Center is strictly prohibited.

## Peak Report

Peak#	R.Time	Name	Area%
1	10.809	2,5-Diethyl tetrahydrofuran	0.08
2	12.081	Hashishene	0.08
3	12.327	alpha-Thujene	0.04
4	12.761	alpha-Pinene	0.86
5	13.706	Camphene	0.02
6	13.921	Methyl cyclohexanone	0.05
7	14.985	Sabinene	0.51
8	15.316	beta-Pinene	0.98
9	15.918	Myrcene	1.77
10	16.389	3-Octanol	0.39
11	16.868	para-Mentha-1(7),8-diene	0.07
12	17.682	alpha-Terpinene	0.12
13	18.207	para-Cymene	0.25
14	18.621	Limonene	19.99
15	18.685	beta-Phellandrene	0.06
16	18.772	1,8-Cineole	2.12
17	18.835	cis-beta-Ocimene	0.05
18	19.530	trans-beta-Ocimene	0.05
19	20.356	gamma-Terpinene	0.24
20	21.210	cis-Sabinene hydrate	0.23
21	22.166	Terpinolene	0.09
22	22.548	para-Cymenene	0.03
23	23.161	Linalool	0.07
24	24.466	3-Octanol acetate	0.10
25	27.151	Menthone	0.22
26	27.774	Isomenthone	0.06
27	28.685	Menthol	1.29
28	28.858	Terpinen-4-ol	0.54
29	29.915	alpha-Terpineol	0.26
30	30.128	cis-Dihydro carvone	1.99
31	30.553	trans-Dihydro carvone	0.24
32	31.732	trans-Carveol	0.29
33	32.832	cis-Carveol	0.17
34	33.750	Carvone	59.13
35	33.845	Carvotanacetone	0.04
36	34.079	Piperitone	0.60
37	34.598	cis-Carvone oxide	0.05
38	34.980	Isopiperitenone	0.04
39	35.451	trans-Carvone oxide	0.09
40	36.275	Menthyl acetate	0.16
41	36.565	Dihydroedulan	0.04
42	38.578	Dihydro carvyl acetate	0.27
43	40.817	cis-Carvyl acetate	0.22
44	41.925	alpha-Copaene	0.12
45	42.294	Methyl propenyl hexahydro benzofuran	0.13
46	42.465	beta-Bourbonene	1.66
47	42.649	alpha-Bourbonene	0.14
48	42.797	beta-Elemene	0.18
49	43.069	cis-Jasmone	0.13
50	44.670	beta-Ylangene	0.26
51	44.769	beta-Caryophyllene	1.22
52	45.394	beta-Copaene	0.23
53	46.303	Isogermacrene D	0.15
54	46.794	trans-beta-Farnesene	0.66
55	47.021	alpha-Humulene	0.06
56	47.824	trans-Cadina-1(6),4-diene	0.11
57	48.610	Germacrene D	0.78
58	50.827	delta-Cadinene	0.10
59	54.692	Caryophyllene oxide	0.05
60	55.420	Viridiflorol	0.10
			100.00

