

### Sample Information

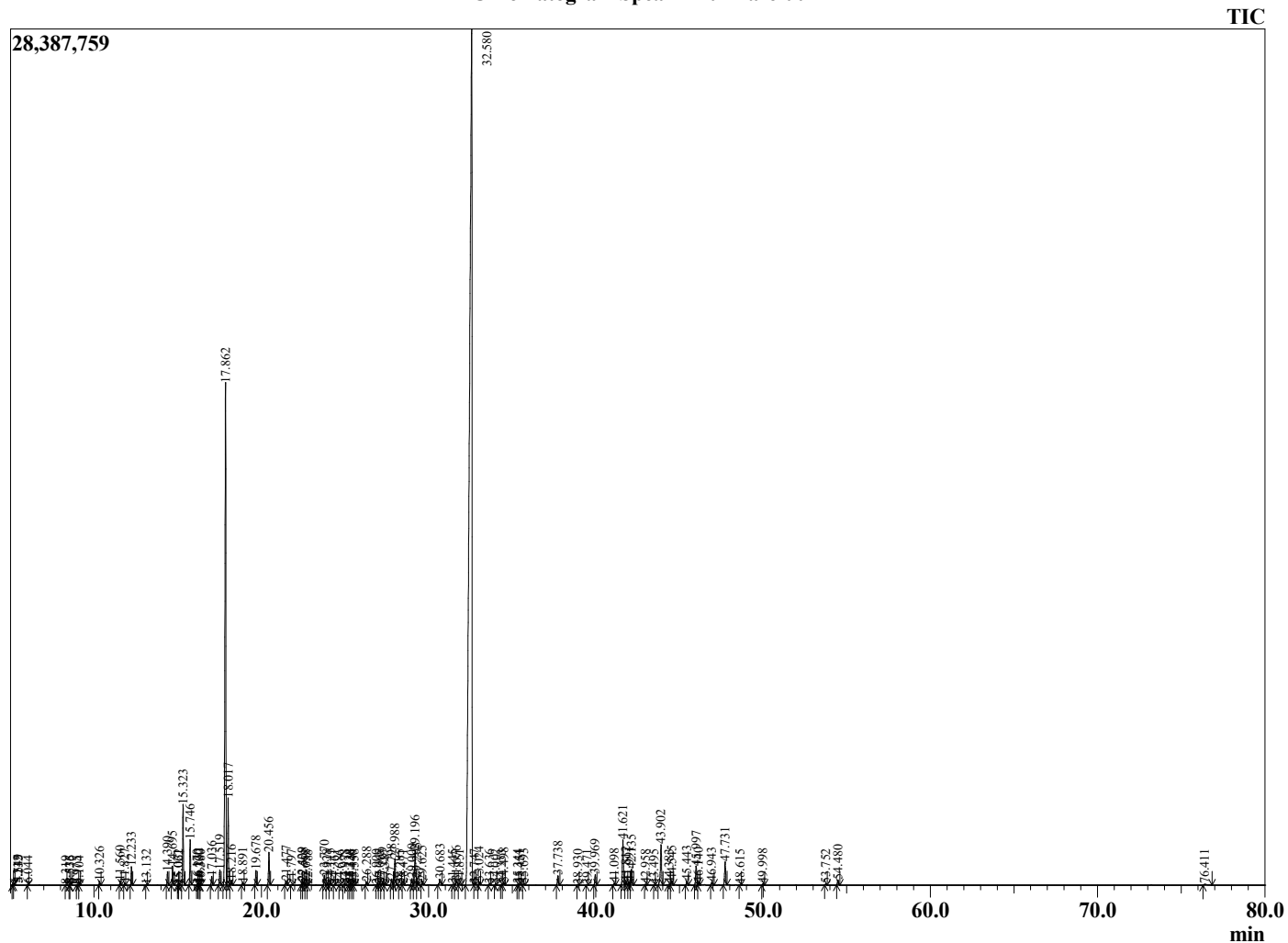
Analyzed by : Dr. Robert S. Pappas  
 Analyzed : 1/10/2022 7:48:50 AM  
 Sample Type : Essential Oil  
 Sample Name : Spearmint - Barefut  
 Sample ID : 0108  
 Injection Volume : 0.10  
 Instrument ID : GC-4



### Peak Report TIC

R.Time	Name	Area%
3.711	2-Methyl-1-propanol	0.01
4.011	3-Methylbutanal	0.06
4.114	2-Methylbutanal	0.04
4.549	2-Ethylfuran	0.02
5.135	3-Methyl-1-butanol	0.02
5.212	2-Methyl-1-butanol	0.01
6.044	alpha-Methyl-methylbutyrate	0.01
8.319	Ethyl-2-methylbutyrate	0.01
8.535	Hex-(2E)-enal	0.01
8.576	Hex-(3Z)-enol	0.02
8.975	Hex-(2E)-enol	0.01
9.104	Hexanol	0.01
10.326	2,5-Diethyltetrahydrofuran	0.07
11.560	Hashishene	0.09
11.827	alpha-Thujene	0.04
12.233	alpha-Pinene	0.38
13.132	Camphene	0.01
14.390	Sabinene	0.31
14.695	beta-Pinene	0.45
15.021	6-Methyl hept-5-en-2-one	0.01
15.062	3-Octanone	0.01
15.323	Myrcene	1.86
15.746	3-Octanol	1.06
16.170	Octanal	0.01
16.232	Pseudolimonene	0.04
16.300	Unidentified	0.01
16.380	alpha-Phellandrene	0.01
17.036	alpha-Terpinene	0.22
17.519	para-Cymene	0.39
17.862	Limonene	14.75
18.017	1,8-Cineole	2.06
18.216	cis-beta-Ocimene	0.12
18.891	trans-beta-Ocimene	0.07
19.678	gamma-Terpinene	0.37
20.456	trans-Sabinene hydrate	0.87
21.477	Terpinolene	0.11
21.797	para-Cymenene	0.02
22.429	Linalool	0.08
22.508	cis-Sabinene hydrate	0.07
22.658	2-Methylbutyl-2-methylbutyrate	0.02
22.788	Nonanal	0.01
23.770	3-Octyl acetate	0.27
23.928	trans-para-Mentha-2,8-dien-1-ol	0.02
24.115	cis-para-Menth-2-en-1-ol	0.05
24.361	Unidentified	0.02
24.686	cis-Limonene oxide	0.01
24.978	cis-para-Mentha-2,8-dien-1-ol + trans-Limonene	0.04
25.234	trans-Pinocarveol	0.02
25.338	trans-para-Menth-2-en-1-ol	0.04
25.440	Unidentified	0.01
25.558	trans-Verbenol	0.01
26.288	Menthone	0.10
26.900	Isomenthone	0.01
27.065	para-Mentha-1,5-dien-8-ol	0.03
27.269	delta-Terpineol	0.07
27.387	Borneol	0.03
27.798	Menthol	0.20
27.988	Terpinen-4-ol	0.77
28.285	Unidentified	0.02
28.471	trans-Isocarveol	0.02
29.000	alpha-Terpineol	0.21
29.196	cis-Dihydrocarvone	1.16

### Chromatogram Spearmint - Barefut



### Comments:

The analysis of this Spearmint batch sample meets the expected chemical profile for authentic essential oil of *Mentha spicata*. No contamination or adulteration was detected. The results provided in this GCMS quality analysis reflect the chemical composition of the oil and lot referenced above on the date of analysis.

R.Time	Name	Area%
29.295	1,6-Dihydrocarveol	0.19
29.625	trans-Dihydrocarvone	0.11
30.683	trans-Carveol	0.22
31.445	Hex-(3Z)-enyl-2-methylbutanoate	0.02
31.676	cis-Carveol	0.17
31.851	3-Hexenyl-2-methylbutyrate	0.05
32.580	Carvone	65.64
32.747	Carvotanacetone	0.02
33.024	Piperitone	0.10
33.636	cis-Carvone oxide	0.03
34.002	Unidentified	0.03
34.353	Unidentified	0.01
34.498	Unidentified	0.06
35.344	Unidentified	0.02
35.451	Menthyl acetate	0.03
35.693	Unidentified	0.05
37.738	Dihydrocarvyl acetate	0.28
38.930	Myrcen-8-yl acetate	0.02
39.471	Eugenol	0.02
39.969	cis-Carvyl acetate	0.31
41.098	alpha-Copaene	0.06
41.621	beta-Bourbonene	1.45
41.812	alpha-Bourbonene	0.10
41.991	beta-Elemene	0.09
42.135	cis-Jasmone	0.47
42.958	cis-Caryophyllene	0.02
43.495	Unidentified	0.01
43.902	trans-beta-Caryophyllene	1.45
44.383	Unidentified	0.02
44.545	beta-Copaene	0.15
45.443	Isogermacrene D	0.13
45.997	trans-beta-Farnesene	0.60
46.140	alpha-Humulene	0.07
46.943	Unidentified	0.09
47.731	Germacrene D	0.74
48.615	Bicyclogermacrene	0.01
49.998	delta-Cadinene	0.04
53.752	Caryophyllene oxide	0.03
54.480	Viridiflorol	0.16
76.411	Octadecanal	0.09
		100.00