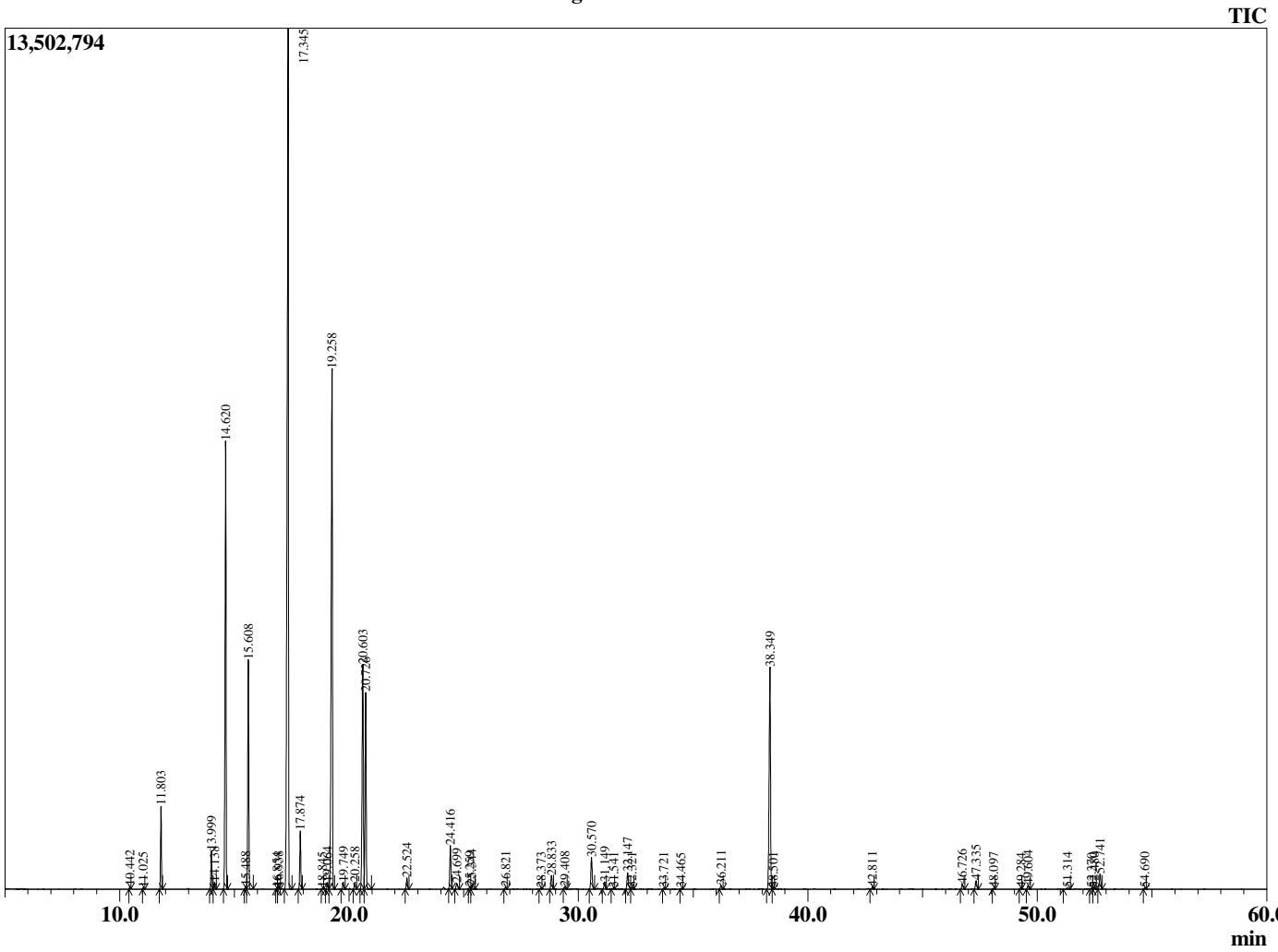
Sample Information

Analyzed by : Dr. Robert S. Pappas
Analyzed : 9/14/2018 10:19:07 PM
Sample Type : Essential Oil
Sample Name : Balsam Fir Needle
Sample ID : P150513ER
Injection Volume : 0.10
Instrument ID: : GC-4

Chromatogram Balsam Fir Needle



Peak Report TIC

R.Time	Name	Area%
10.442	Hex-3(Z)-enol	0.07
11.025	1-Hexanol	0.04
11.803	Santene	1.87
13.999	Tricyclene	0.96
14.138	Thujene <alpha->	0.18
14.620	Pinene <alpha>	11.93
15.488	Fenchene <alpha>	0.08
15.608	Camphene	6.30
16.854	Cymene <para->	0.04
16.938	Sabinene	0.08
17.345	Pinene <beta->	30.67
17.874	Myrcene	1.57
18.845	Hexenyl acetate	0.05
19.064	Phellandrene <alpha->	0.22
19.258	3-Carene	17.34
19.749	Terpinene <alpha->	0.20
20.258	Cymene <para->	0.21
20.603	Limonene	7.75
20.726	Phellandrene <beta>	5.88
22.524	Terpinene <gamma>	0.35
24.416	Terpinolene	1.33
24.699	Fenchone	0.24
25.259	Campholenal <alpha>	0.08
25.344	Linalool	0.14
26.821	Fenchyl alcohol	0.08
28.373	Pinocarveol <trans-(-)>	0.04
28.833	Camphor	0.46
29.408	Terpineol <trans-beta>	0.07
30.570	Borneol	1.09
31.149	Terpinen-4-ol	0.24
31.541	Cymen-8-ol <para->	0.05
32.147	Terpineol <alpha>	0.62
32.321	Methyl chavicol	0.05
33.721	Fenchyl acetate <endo->	0.04
34.465	Methyl thymol ether	0.03
36.211	Piperitone	0.13
38.349	Bornyl acetate	8.01
38.501	Isobornyl acetate	0.03
42.811	Longipinene<alpha>	0.07
46.726	Longifolene	0.17
47.335	Caryophyllene	0.31
48.097	Bergamotene <trans-alpha>	0.04
49.284	Farnesene <(E)-, beta->	0.04
49.604	Humulene alpha>	0.13
51.314	Farnesene <(Z)beta>	0.06
52.370	Himachalene <beta>	0.03
52.480	Farnesene <(E,E)-alpha>	0.05
52.741	Bisabolene <beta->	0.55
54.690	Bisabolene <alpha>	0.05
		100.00

Comments:

The analysis of this Balsam Fir Needle batch sample meets the expected chemical profile for authentic essential oil of *Abies balsamea.* 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.