

Sample Information

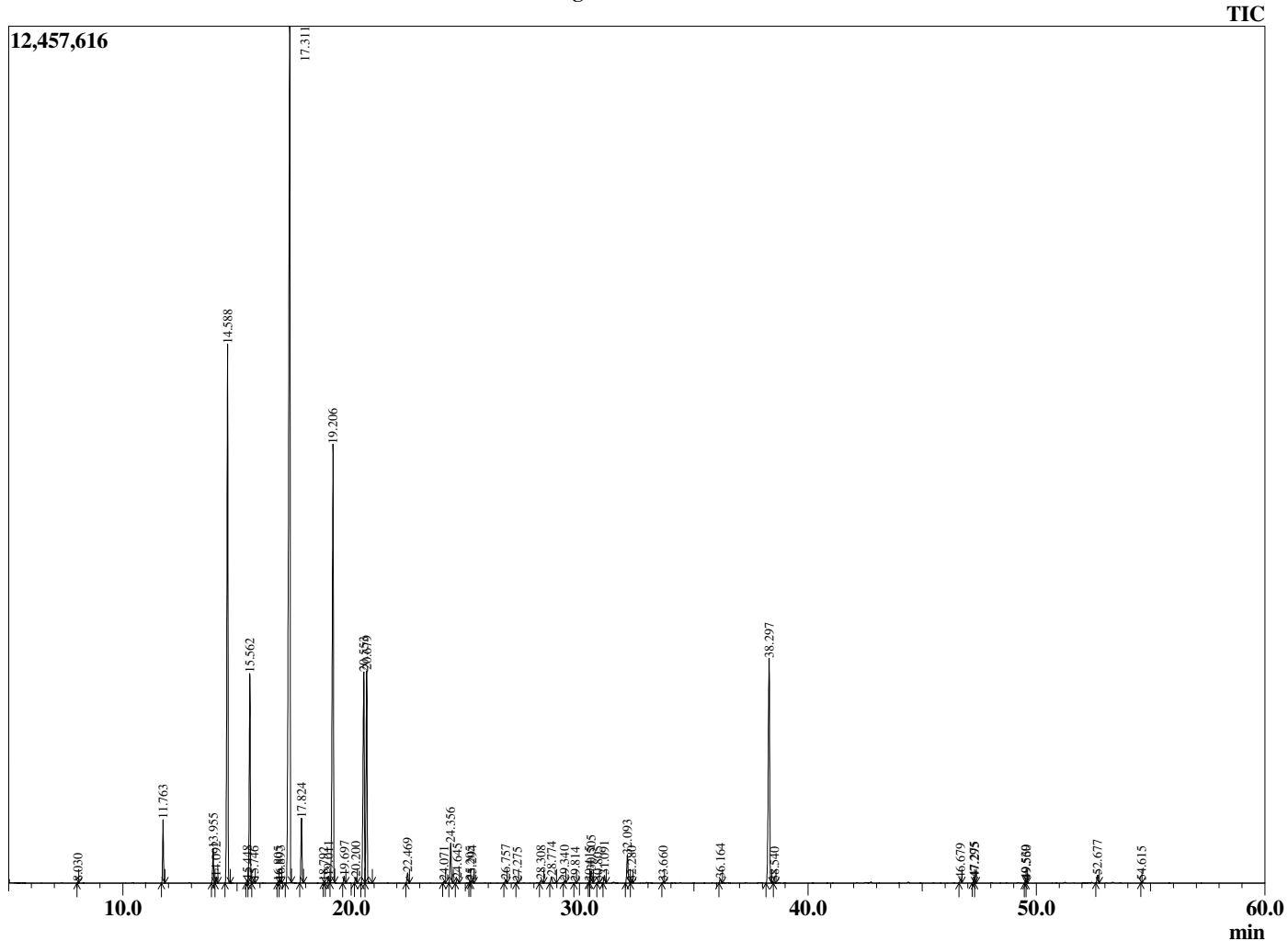
Analyzed by : Dr. Robert S. Pappas
 Analyzed : 10/12/2018 7:44:54 AM
 Sample Type : Essential Oil
 Sample Name : Balsam Fir Needle
 Sample ID : P151021AR
 Injection Volume : 0.10
 Instrument ID : GC-3



Peak Report TIC

R.Time	Name	Area%
8.030	Hexyl methyl ether	0.01
11.763	Santene	1.44
13.955	Tricyclene	0.83
14.092	alpha-Thujene	0.16
14.588	alpha-Pinene	14.93
15.448	alpha-Fenchene	0.07
15.562	Camphene	5.61
15.746	Thuja-2,4(10)diene	0.04
16.805	Cymene isomer	0.04
16.893	Sabinene	0.07
17.311	beta-Pinene	33.16
17.824	Myrcene	1.77
18.792	3-trans-Hexenyl acetate	0.01
19.011	alpha-Phellandrene	0.20
19.206	delta-3-Carene	14.37
19.697	alpha-Terpinene	0.20
20.200	para-Cymene	0.16
20.553	Limonene	7.26
20.679	beta-Phellandrene	6.22
22.469	gamma-Terpinene	0.30
24.071	Terpinolene isomer	0.05
24.356	Terpinolene	1.25
24.645	Fenchone	0.17
25.205	Unidentified	0.04
25.294	Linalool	0.08
26.757	alpha-Fenchol	0.10
27.275	alpha-Campholenal	0.03
28.308	trans-Pinocarveol	0.11
28.774	Camphor	0.23
29.340	trans-beta-Terpineol	0.06
29.814	Pinocarpone	0.02
30.415	para-Mentha-1,5-dien-8-ol	0.02
30.505	Borneol	0.40
30.805	trans-Pinocamphone	0.04
31.091	Terpinen-4-ol	0.24
32.093	alpha-Terpineol	1.03
32.280	Estragole	0.04
33.660	alpha-Fenchyl acetate	0.04
36.164	Piperitone	0.14
38.297	Bornyl acetate	8.29
38.540	Thymol	0.04
46.679	Junipene	0.14
47.275	trans-beta-Caryophyllene	0.15
47.295	Unidentified	0.06
49.539	trans-beta-Farnesene	0.06
49.560	Unidentified	0.03
52.677	beta-Bisabolene	0.26
54.615	Unidentified	0.03
		100.00

Chromatogram Balsam Fir Needle



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.