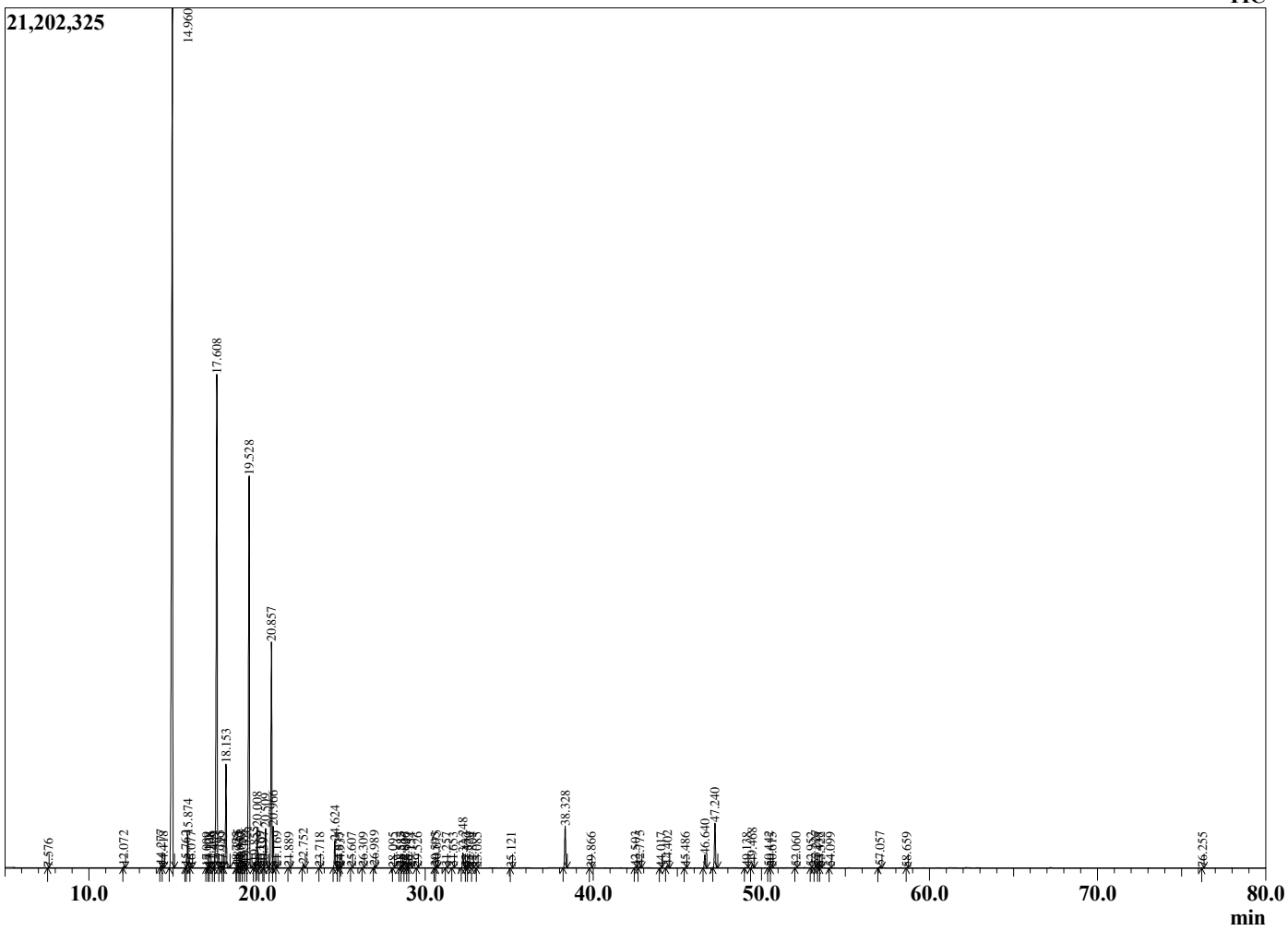
Sample Information

Analyzed by : Dr. Robert S. Pappas
Analyzed : 11/25/2020 2:09:10 AM
Sample Type : Essential Oil
Sample Name : Pine - Barefut
Sample ID : 0105
Injection Volume : 0.10
Instrument ID: : GC-2

Chromatogram Pine - Barefut



Comments:

The analysis of this Pine batch sample meets the expected chemical profile for authentic essential oil of *Pinus sylvestris*. 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.

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Peak Report TIC

R.Time	Name	Area%
7.576	Toluene	0.00
12.072	Santene	0.05
14.277	Tricyclene	0.09
14.418	alpha-Thujene	0.03
14.960	alpha-Pinene	38.86
15.762	alpha-Fenchene	0.04
15.874	Camphene	1.06
16.077	Thuja-2,4(10)diene	0.03
17.009	Bois de Rose oxide	0.01
17.128	Unidentified	0.01
17.208	Sabinene	0.01
17.409	Unidentified	0.04
17.608	beta-Pinene	20.09
17.795	Unidentified	0.07
17.949	3-para-Menthene	0.01
18.153	Myrcene	3.46
18.775	Unidentified	0.00
18.855	Terpinene isomer	0.11
18.935	Unidentified	0.02
19.057	Unidentified	0.03
19.185	Unidentified	0.12
19.326	alpha-Phellandrene	0.18
19.528	delta-3-Carene	15.53
19.855	1,4-Cineole	0.20
20.008	alpha-Terpinene	1.37
20.169	meta-Cymene	0.02
20.397	Unidentified	0.01
20.509	para-Cymene	1.40
20.857	Limonene	8.67
20.966	beta-Phellandrene	1.38
21.169	(Z)-beta-Ocimene	0.01
21.889	(E)-beta-Ocimene	0.01
22.752	gamma-Terpinene	0.14
23.718	Unidentified	0.01
24.624	Terpinolene	0.99
24.875	Fenchone	0.01
24.937	Dehydro-para-cymene	0.01
25.607	alpha-Pinene oxide	0.01
26.309	Thujol	0.02
26.989	alpha-Fenchol	0.06
28.095	Terpin-3-en-1-ol	0.01
28.513	trans-Pinocarveol	0.03
28.585	Epoxyterpinolene	0.01
28.806	trans-Verbenol	0.02
28.947	Camphor	0.01
29.154	alpha-Phellandrene-8-ol	0.02
29.526	trans-beta-Terpineol	0.01
30.595	Unidentified	0.01
30.675	Borneol	0.07
31.257	Terpinen-4-ol	0.02
31.653	para-Cymen-8-ol	0.02
32.248	alpha-Terpineol	0.63
32.432	Methyl chavicol	0.02
32.570	gamma-Terpineol	0.01
32.804	Unidentified	0.01
33.085	Verbenone	0.00
35.121	Unidentified	0.01
38.328	Bornyl acetate	1.71
39.866	Unidentified	0.01
42.503	alpha-Cubebene	0.03
42.775	alpha-Longipinene	0.07
44.017	Isoledene	0.01

R.Time	Name	Area%
44.402	alpha-Copaene	0.11
45.486	Sativene	0.01
46.640	Junipene	0.54
47.240	trans-beta-Caryophyllene	1.89
49.138	Unidentified	0.02
49.468	alpha-Humulene	0.20
50.442	10-beta-H-Cadina-1(6),4-diene	0.03
50.615	trans-Cadina-1(6),4-diene	0.01
52.060	alpha-Muurolene	0.02
52.952	gamma-Cadinene	0.01
53.227	delta-Cadinene	0.10
53.438	Unidentified	0.01
53.522	Unidentified	0.02
54.099	trans-Cadina-1,4-diene	0.01
57.057	Caryophyllene oxide	0.07
58.659	Unidentified	0.01
76.255	Myrcene dimer	0.02
		100.00