

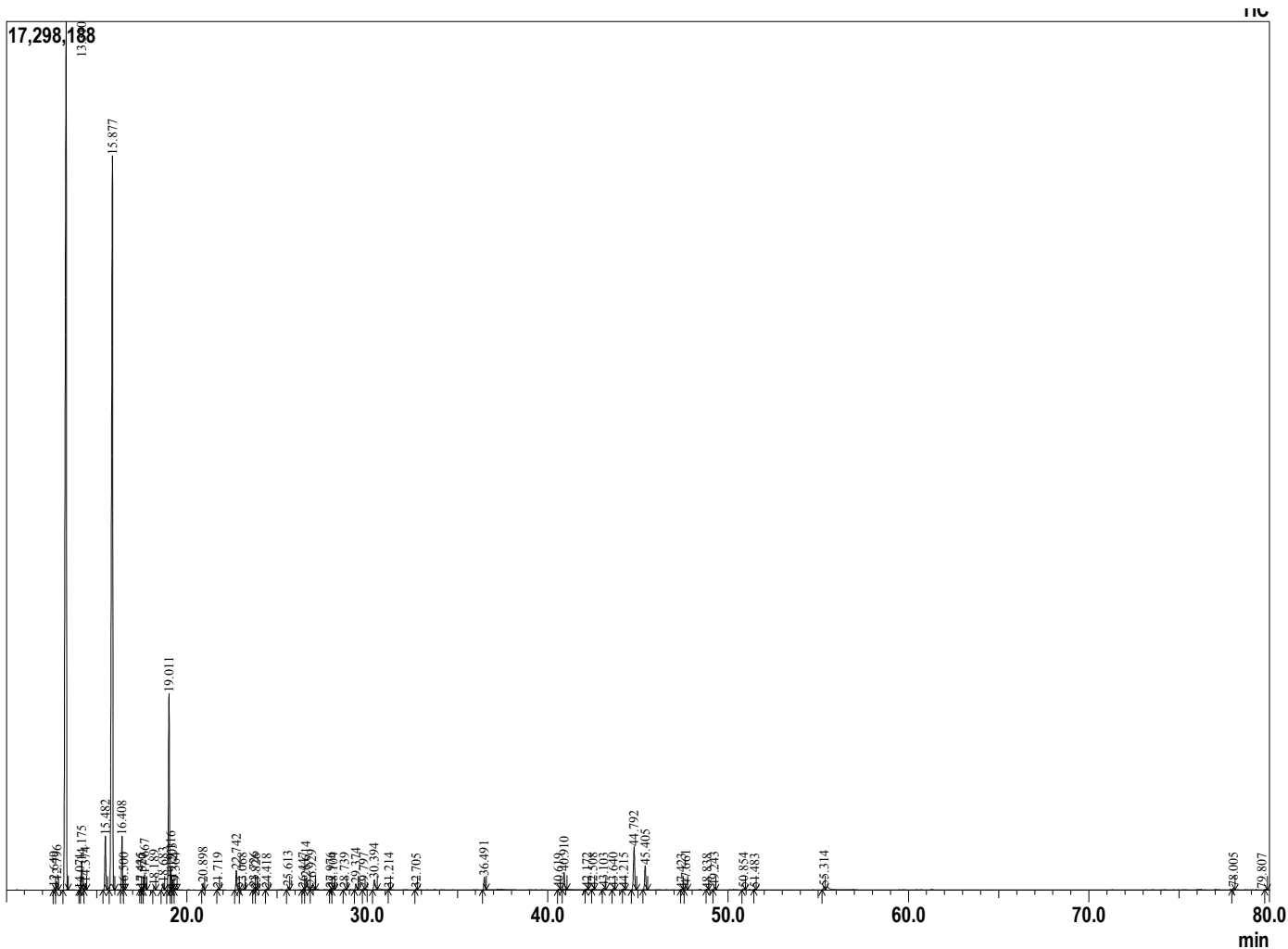
Analyzed by : Dr. Prabodh Satyal
 Analyzed : 8/23/2018 8:42:20 AM
 Sample Type : Essential Oil
 Sample Name : Pine India
 Lot# : 1800361
 Injection Volume : 0.10

Sample Information



Peak Report TIC

R.Time	Name	Area%
12.649	Tricyclene	0.06
12.796	Thujene <alpha->	0.26
13.310	Pinene<alpha->	42.58
14.071	Fenchene <alpha->	0.02
14.175	Camphene	0.83
14.374	Thuja-2,4(10)diene	0.20
15.482	Sabinene	1.88
15.877	Pinene<beta->	35.23
16.408	Myrcene	1.66
16.500	Cycloheptane<trimethyl>	0.03
17.435	1,4-Cyclohexadiene, 3-ethenyl-1,2-dimethyl-	0.03
17.520	Phellandrene <alpha->	0.03
17.667	delta-3-Carene	0.50
18.189	Terpinene <alpha->	0.13
18.683	Cymene<para->	0.27
19.011	Limonene	6.83
19.116	Phellandrene <beta->	0.70
19.203	1,8-cineole	0.33
19.364	Ocimene<(Z)-beta->	0.05
20.898	Terpinene <gamma->	0.24
21.719	Sabinene hydrate <cis>	0.04
22.742	Terpinolene	0.74
23.068	Cymenene<para->	0.10
23.726	Undecane	0.08
23.826	Sabinene hydrate <trans>	0.02
24.418	Pine needle	0.04
25.613	Campholenal<alpha->	0.12
26.447	Nopinone	0.04
26.614	Pinocarveol <trans->	0.59
26.929	Verbenol<trans->	0.25
27.976	Pinocamphone<trans->	0.05
28.104	Pinocarvone	0.05
28.739	Mentha-1,5-dien-8-ol <para>	0.05
29.374	Terpinen-4-ol	0.24
29.797	Cymen-8-ol<para->	0.05
30.394	Terpineol <alpha>	0.54
31.214	Verbenone	0.03
32.705	Thymol, methyl ether	0.04
36.491	Bornyl acetate	0.50
40.619	Terpinyl acetate<alpha->	0.04
40.910	Longipinene<alpha->	0.73
42.172	Cyclosativene	0.05
42.508	Longicyclene	0.03
43.103	Bourbonene <alpha>	0.06
43.640	Sativene<trans>	0.05
44.215	Caryophyllene <cis>	0.04
44.792	Longifolene	1.93
45.405	Caryophyllene <trans>	1.00
47.423	Farnesene<(E)-beta->	0.02
47.661	Humulene <alpha>	0.16
48.838	Cadina-1(6),4-diene <trans>	0.02
49.243	Germacrene D	0.11
50.854	Bisabolene <beta->	0.05
51.483	Cadinene <delta->	0.03
55.314	Caryophyllene oxide	0.13
78.005	19-nor-abieta-8,11,13 -triene	0.08
79.807	Abietatriene	0.03
87.756	Palustral	0.03
		100.00



Comments:
 The analysis of this Pine Needle batch sample does meets the expected chemical profile of authentic essential oil of Pinus sylvestris from India.

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Reviewed by: Ambika Poudel