

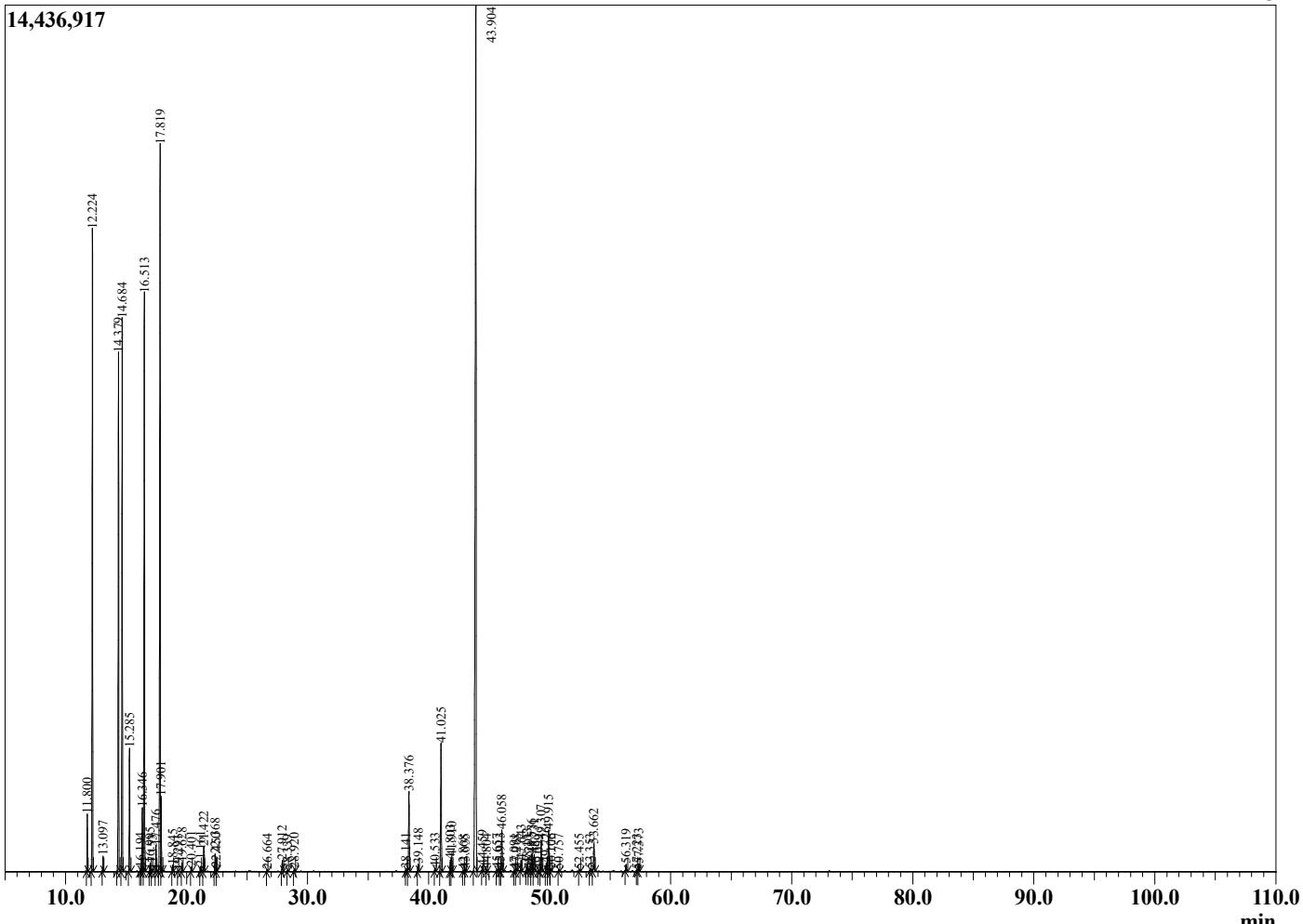
### Sample Information

Analyzed by : Dr. Robert S. Pappas  
 Analyzed : 5/15/2023 9:05:44 PM  
 Sample Type : Essential Oil  
 Sample Name : Black Pepper, Super - Revive  
 Sample ID : 0H  
 Injection Volume : 0.10  
 Instrument ID: : GC-4



### Peak Report TIC

R.Time	Name	Area%
11.800	alpha-Thujene	0.87
12.224	alpha-Pinene	10.34
13.097	Camphene	0.24
14.379	Sabinene	9.21
14.684	beta-Pinene	9.67
15.285	Myrcene	2.05
16.194	Pseudolimonene	0.06
16.346	alpha-Phellandrene	1.17
16.513	delta-3-Carene	10.55
16.995	alpha-Terpinene	0.15
17.153	ortho-Cymene	0.02
17.476	para-Cymene	0.49
17.819	Limonene	15.27
17.901	beta-Phellandrene	1.12
18.845	trans-beta-Ocimene	0.12
19.291	alpha-Thujene	0.01
19.628	gamma-Terpinene	0.16
20.401	trans-4-Thujanol	0.09
21.161	Unidentified	0.09
21.422	Terpinolene	0.46
22.368	Linalool	0.36
22.450	Unidentified	0.05
26.664	alpha-Phellandrene-8-ol	0.03
27.912	Terpinen-4-ol	0.23
28.339	para-Cymen-8-ol	0.02
28.920	alpha-Terpineol	0.06
38.141	delta-Elemene	0.06
38.376	alpha-Elemene	1.83
39.148	alpha-Cubebene	0.17
40.533	Cyclosativene	0.08
41.025	alpha-Copaene	2.92
41.803	cis-Cadina-1(6),4-diene	0.27
41.910	beta-Elemene	0.32
42.868	cis-Caryophyllene	0.03
43.035	alpha-Gurjunene	0.05
43.904	beta-Caryophyllene	25.65
44.459	beta-Copaene	0.12
44.804	alpha-Guaiene	0.04
45.657	Cadina-3,5-diene	0.04
45.913	trans-beta-Farnesene	0.06
46.058	alpha-Humulene	0.95
47.091	Cadina-1(6),4-diene	0.03
47.268	gamma-Muurolene	0.04
47.643	Germacrene D	0.23
48.133	beta-Selinene	0.16
48.293	cis-Muurola-4(14),5-diene	0.07
48.536	icyclogermacrene	0.45
48.731	Unidentified	0.40
49.099	trans,trans-alpha-Farnesene	0.02
49.307	beta-Bisabolene	0.72
49.726	Cubedol	0.18
49.915	delta-Cadinene	0.97
50.106	cis-Calamenene	0.04
50.757	trans-Cadina-1,4-diene	0.04
52.455	trans-Nerolidol	0.05
53.353	(-)Spathulenol	0.05
53.662	Caryophyllene oxide	0.71
56.319	(+)-Spathulenol	0.15
57.223	alpha-epi-Muurolol	0.02
57.373	alpha-Muurolol	0.17
		100.00



### Comments:

The analysis of this Black Pepper batch sample meets the expected chemical profile for authentic essential oil of *Piper nigrum*. 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.