

## Certificate Of Analysis

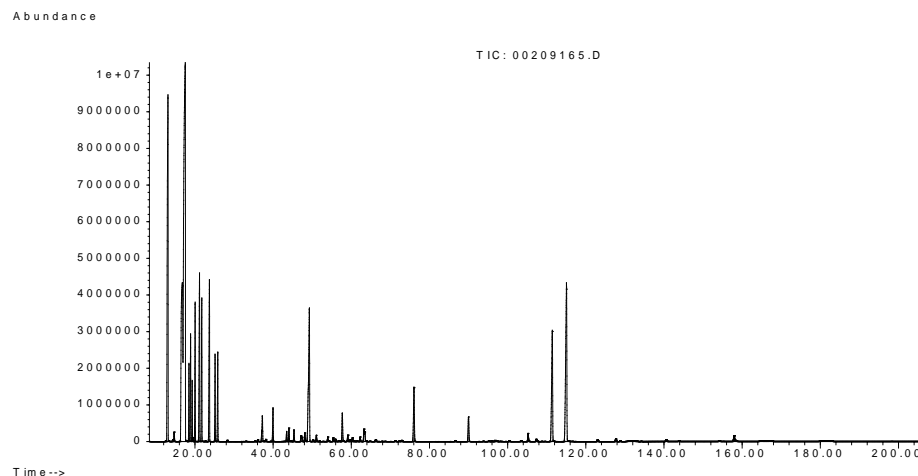
Mass spectra were recorded with a 5973 Agilent Selective detector coupled to a 6890N Agilent GC using an Agilent 50 m x 0.2 mm fused silica column coated with 0.33  $\mu\text{m}$  FFAP (crosslinked). The GC was operated under the following conditions: injector temp.: 250°C; oven temp. programmed: 60°C held for one min to 115°C at 2.5°C per min, then to 210°C at 1.0°C per min and held for 30 min; injection size: 1 $\mu\text{L}$  (~50% solution in spectroscopy grade n-pentane) split 1:10. The MSD EI was operated under the following conditions: electron impact source 70 eV, 250°C.

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Sample: nutmeg #HD/O/NM/022  
Species: *Myristica fragrans*  
Client: Lisa Easler  
(<http://achs.edu/>)  
Date: 2/10/2016

Comments: The composition of the oil corresponds from the expected natural variation of *Myristica fragrans* oil. No adulteration was detected. Odor quality is good.

RT	Component	Area % by GC/MS
13.09	alpha-pinene	12.14
14.30	alpha-fenchene	0.04
14.66	camphene	0.24
16.81	beta-pinene	10.92
17.52	sabinene	26.04
18.47	delta-3-carene	1.30
18.89	myrcene	2.11
19.29	alpha-phellandrene	0.96
20.05	alpha-terpinene	2.74
21.17	limonene	4.26
21.75	beta-phellandrene	3.09
22.62	(Z)-beta-ocimene	0.01
23.70	gamma-terpinene	4.02
25.15	p-cymene	1.69
25.84	alpha-terpinene	1.82
36.05	alpha-p-dimethyl styrene	0.04
37.25	trans-sabinene hydrate	0.79
39.97	alpha-copaene	0.83
43.56	linalool	0.24
44.05	cis-sabinene hydrate	0.34
45.34	trans-p-menth-2-en-1-ol	0.29
47.15	bornyl acetate	0.16
47.34	(E)-alpha-bergamotene	0.10
49.27	terpinen-4-ol	6.14
51.07	beta-terpineol	0.16
53.97	citronellyl acetate	0.12
55.34	alpha-humulene	0.10
55.92	trans-piperitol	0.06
57.70	alpha-terpineol	0.86
59.11	germacrene D	0.18
62.28	cis-piperitol	0.13
63.24	geranyl acetate	0.37
63.46	delta-cadinene	0.26
76.03	safrole	2.02
86.56	caryophyllene oxide	0.02
89.99	methyl eugenol	0.84
105.25	eugenol	0.29
107.29	(E)-methyl isoeugenol	0.08
111.42	elemicin	4.78
115.06	myristicin	7.79
127.64	(E)-isoelemicin	0.09
140.51	4-allyl-2,6-dimethylphenol	0.06
157.95	myristic acid	0.31



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