

GC/MS & COA

Juniper Berry Oil - 11273B09

ANALYSIS

Type: Essential oil

Source : juniperus communis **Analysis date:** December 1, 2020

Physical aspect: Almost colorless to light yellow

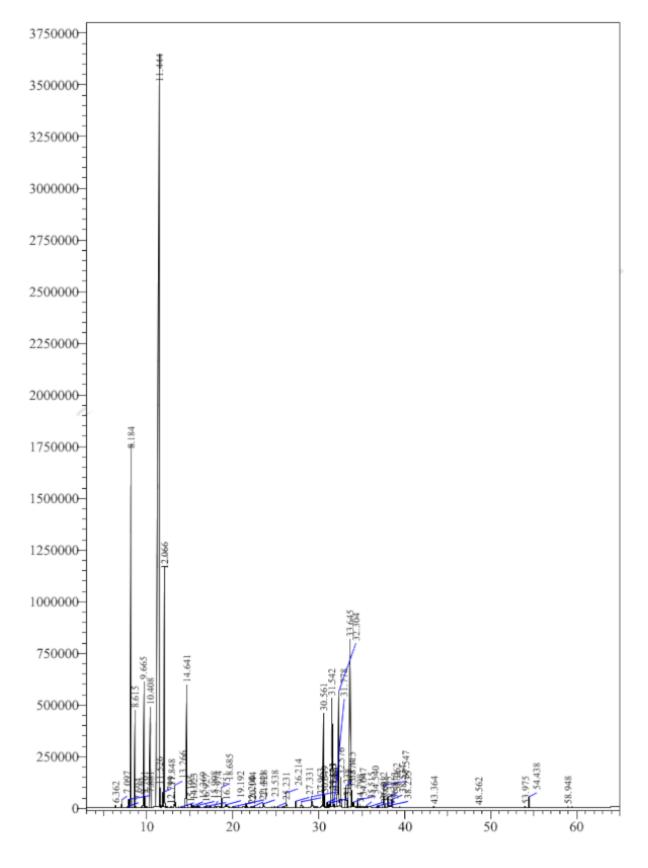
CONCLUSION

No adulterant, contaminant or diluent has been detected using this method.

Physico-Chemical Properties	Specifications	Results
Specific Gravity at 20° C	0.850 - 0.882	Complies
Refractive Index at 20° C	1.470 - 1.485	Complies
Optical Rotation at 20° C	-175	Complies

1	Peak#	Ret.Time	Area	Area%	Name
2 7,097 130621 0.1353 2-bomene 3 7,694 15295 0.0158 Tricyclene 4 7,881 178033 0.1844 Thujene alpha 5 8.184 8880007 9.1993 Alpha-pinene 6 8.615 1765951 1.8294 Camphene 7 9.665 2789653 2.8900 Sabinene 8 9,761 170228 0.1782 Pinene beta 9 10.408 3202135 3.3173 Myrcene 10 11.444 44901757 46.5162 Delta-3-carene 11 11.526 179238 0.1857 Terpinene alpha 12 11.848 294956 0.3056 Sylvestrene 13 12.066 6663400 6.9030 Limonene 14 12.799 27318 0.0283 Isovalerate butyl 15 13.266 3662270 0.3753 Gamma-Terpinene 16 14.023 1128 0.	1		30664	0.0318	
3	2	7.097	130621		
4 7.881 178033 0.1844 Thujene alpha 5 8.184 8880007 9.1993 Alpha-pinene 6 8.615 1765951 1.8294 Camphene 7 9.665 2789653 2.8900 Sabinene 8 9.761 172028 0.1782 Pinene beta 9 10.408 3202135 3.3173 Myrcene 10 11.444 44901757 46.5162 Delta-3-carene 11 11.526 179238 0.1857 Terpinene alpha 12 11.848 294956 0.3056 Sylvestrene 13 12.066 6663400 6.9030 Limonene 14 12.799 27318 0.0283 Isovalerate butyl 15 13.266 362270 0.3753 Gamma-Terpinene 16 14.023 11288 0.0117 1-Octanol 17 14.641 3236139 3.3525 Alpha-terpinolene 18 15.195 46109					
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29 22.441 25163 0.0261 Citronellate methyl 30 23.538 61212 0.0634 Bornyl acetate 31 25.231 12884 0.0133 Geranic acid methyl-ester 32 26.214 339999 0.3522 Alpha-Cubebene 33 27.331 146215 0.1515 Alpha-Copaene 34 27.963 164482 0.1704 Beta-Cubebene 35 29.183 209530 0.2171 Caryophyllene (E) 36 30.561 2794410 2.8949 Cadina-3,5-diene 37 30.649 197639 0.2047 Alpha-humulene 38 30.990 145734 0.1510 Muurola-4(14),5-diene cis 39 31.238 101827 0.1055 Beta-Copaene 40 31.542 3446900 3.5708 Cadina-1(6),4-diene 41 31.621 207300 0.2148 Gamma-Muurolene 42 31.778 53776 0.0557 Germacrene D					
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32 26.214 339999 0.3522 Alpha-Cubebene 33 27.331 146215 0.1515 Alpha-Copaene 34 27.963 164482 0.1704 Beta-Cubebene 35 29.183 209530 0.2171 Caryophyllene (E) 36 30.561 2794410 2.8949 Cadina-3,5-diene 37 30.649 197639 0.2047 Alpha-humulene 38 30.990 145734 0.1510 Muurola-4(14),5-diene cis 39 31.238 101827 0.1055 Beta-Copaene 40 31.542 3446900 3.5708 Cadina-1(6),4-diene 41 31.621 207300 0.2148 Gamma-Muurolene 42 31.778 53776 0.0557 Germacrene D 43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	31		12884	0.0133	Geranic acid methyl-ester
34 27.963 164482 0.1704 Beta-Cubebene 35 29.183 209530 0.2171 Caryophyllene (E) 36 30.561 2794410 2.8949 Cadina-3,5-diene 37 30.649 197639 0.2047 Alpha-humulene 38 30.990 145734 0.1510 Muurola-4(14),5-diene cis 39 31.238 101827 0.1055 Beta-Copaene 40 31.542 3446900 3.5708 Cadina-1(6),4-diene 41 31.621 207300 0.2148 Gamma-Muurolene 42 31.778 53776 0.0557 Germacrene D 43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	32	26.214	339999		
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36 30.561 2794410 2.8949 Cadina-3,5-diene 37 30.649 197639 0.2047 Alpha-humulene 38 30.990 145734 0.1510 Muurola-4(14),5-diene cis 39 31.238 101827 0.1055 Beta-Copaene 40 31.542 3446900 3.5708 Cadina-1(6),4-diene 41 31.621 207300 0.2148 Gamma-Muurolene 42 31.778 53776 0.0557 Germacrene D 43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	34		164482		
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38 30.990 145734 0.1510 Muurola-4(14),5-diene cis 39 31.238 101827 0.1055 Beta-Copaene 40 31.542 3446900 3.5708 Cadina-1(6),4-diene 41 31.621 207300 0.2148 Gamma-Muurolene 42 31.778 53776 0.0557 Germacrene D 43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	36	30.561	2794410		
38 30.990 145734 0.1510 Muurola-4(14),5-diene cis 39 31.238 101827 0.1055 Beta-Copaene 40 31.542 3446900 3.5708 Cadina-1(6),4-diene 41 31.621 207300 0.2148 Gamma-Muurolene 42 31.778 53776 0.0557 Germacrene D 43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	37	30.649	197639	0.2047	Alpha-humulene
39 31.238 101827 0.1055 Beta-Copaene 40 31.542 3446900 3.5708 Cadina-1(6),4-diene 41 31.621 207300 0.2148 Gamma-Muurolene 42 31.778 53776 0.0557 Germacrene D 43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	38	30.990	145734		
40 31.542 3446900 3.5708 Cadina-1(6),4-diene 41 31.621 207300 0.2148 Gamma-Muurolene 42 31.778 53776 0.0557 Germacrene D 43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	39	31.238	101827		
41 31.621 207300 0.2148 Gamma-Muurolene 42 31.778 53776 0.0557 Germacrene D 43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	40	31.542	3446900	3.5708	Cadina-1(6),4-diene
43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	41	31.621	207300		3.77
43 32.304 3722184 3.8560 Gamma-Amorphene 44 32.576 724473 0.7505 Alpha-Muurolene	42	31.778	53776	0.0557	Germacrene D
44 32.576 724473 0.7505 Alpha-Muurolene	43	32.304	3722184	3.8560	Gamma-Amorphene
	44	32.576	724473		
Jointo Jorio Villa Gamma-Cadment	45	33.115	764489		

Peak#	Ret.Time	Area	Area%	Name
46	33.645	7335139	7.5989	Delta-Cadinene
47	33.874	333618	0.3456	Cadina-1,4-diene trans
48	34.047	101812	0.1055	Alpha-Cadinene
49	34.540	171285	0.1774	Elemol
50	34.798	83429	0.0864	Germacrene B
51	35.515	45694	0.0473	Germacren D-4-ol
52	36.012	10922	0.0113	Cubebol 10-epi
53	36.813	37309		Beta-Oplopenone
54	37.547	563623	0.5839	Epicubenol
55	37.688	38559	0.0399	Gamma-Eudesmol
56	38.062	310733	0.3219	T-Muurolol
57	38.235	20365	0.0211	Alpha-Muurolol
58	38.372	22977	0.0238	Beta-Eudesmol
59	38.534	213972	0.2217	Cadin-4-en-10-ol
60	43.364	39752	0.0412	Acetoxyelemol 8-alpha
61	48.562	15706	0.0163	Camphorene m
62	53.975	36646	0.0380	Nezukol
63	54.438	329346		Caryophyllene 14-hydroxy-9-epi-E
64	58.948	28056	0.0291	Abietal 4-epi
Total		96529388	100.0000	



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