



GC/MS BATCH NUMBER: CG0102

ESSENTIAL OIL: CLOVE BUD
BOTANICAL NAME: SYZYGIIUM AROMATICUM
ORIGIN: INDONESIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF CLOVE BUD OIL	%
EUGENOL	81.0
EUGENYL ACETATE	10.3
β -CARYOPHYLLENE	6.3

Comments from Robert Tisserand: A good odor profile for Clove bud oil, and the 3 key ISO constituents conform to the standard.

Date : June 14, 2016

SAMPLE IDENTIFICATION

Internal code : 16F08-PTH3-1-SM

Customer identification : Clove Bud - Indonesia - CG010252

Type : Essential oil

Source : *Syzygium aromaticum*

Customer : Plant Therapy

ANALYSIS

Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Analyst : Sylvain Mercier, M. Sc., chimiste

Analysis date : 2016-06-14

Checked and approved by :

Alexis St-Gelais, M. Sc., chimiste 2013-174

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IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Furfural	2.11	838	0.07	0.06	1413	6.04*	Furan
Methyl salicylate	8.95	1199	0.18	0.10	1674	13.66*	Phenolic ester
Chavicol	12.07	1271	0.17	0.20	2231	41.44	Phenylpropanoid
α -Cubebene	15.56	1335	0.06	[0.06]	1413	6.04*	Sesquiterpene
Eugenol	17.72*	1368	80.99	81.12	2063	36.37	Phenylpropanoid
α -Copaene	17.72*	1368	[80.99]	0.16	1435	6.46	Sesquiterpene
β -Caryophyllene	20.21	1406	6.30	6.20	1526	8.32	Sesquiterpene
Methyleugenol	20.92	1414	0.05	0.06	1932	29.40	Phenylpropanoid
α -Humulene	22.81	1437	0.74	0.75	1584	10.07	Sesquiterpene
δ -Cadinene	28.60	1508	0.09	[0.10]	1674	13.66*	Sesquiterpene
<i>trans</i> -Calamenene	28.92	1512	0.05	0.04	1734	16.60	Sesquiterpene
Eugenyl acetate	30.68	1536	10.28	10.26	2158	39.44	Phenylpropanoid ester
Caryophyllene oxide	33.20	1571	0.27	0.26	1850	23.72	Sesquiterp. ether
Total identified	99.25%			99.21%			

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

Note: no correction factor was applied

OTHER DATA

Physical aspect : Light brown liquid

Refractive index : 1.5340 \pm 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent were detected using this method.



