



Certificate of Analysis

Cardamom CO2 Select

Batch #HO-471208

lab no: 23142
type no: 003.006
production: July 2017 retest: July 2022
raw material: *Elettaria cardamomum* - whole dried fruit, shell and seeds (organic)
country of origin of raw material: Honduras
country of origin of product: Germany
D/E - ratio: 18 - 22 kg raw material yield 1 kg product.

Sensory Check

feature	reference	result
Appearance:	pale yellow, clear liquid	meets
Odour:	characteristic	meets

Analytical Check

feature	method	limits	value unit
Content of essential oil	21.006.01, Distillation, gravimetric	> 85	91,9 % (g/100g)
Composition of the volatile compounds:	GCMS, 100 % Method		
alpha Pinene /beta Pinene	GCMS, cardamom.met	n.s.	1,0 / 0,28 %
Sabinene	GCMS, cardamom.met	n.s.	3,8 %
beta Myrcene	GCMS, cardamom.met	n.s.	1,6 %
Limonene	GCMS, cardamom.met	n.s.	1,5 %
1,8 Cineol	GCMS, cardamom.met	20 - 45	21,9 %
Linalool	GCMS, cardamom.met	n.s.	3,4 %
alpha Terpineol	GCMS, cardamom.met	n.s.	3,0 %
Linalyl acetate	GCMS, cardamom.met	n.s.	5,4 %
Citral (Neral+Geranial)	GCMS, cardamom.met	n.s.	1,1 (0,31 + % 0,78)
Geraniol	GCMS, cardamom.met	n.s.	0,65 %
Terpinyl acetate	GCMS, cardamom.met	35 - 55	50,1 %
Refractive index (20°C)	21.080.03, Abbe-Refractometer	1,4650 - 1,4685	1,4665
Density (20°C)	21.024.03, Pycnometer	0,910 - 0,980	0,9317 g/cm ³



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Monitoring of substances*:

Methyleugenol	GCMS	n.s.	n.d. (< 0,001) %
1,8 Cineol	GCMS	n.s.	21,9 %

n.s. = not specified n.d. = not detected

*Substances to be monitored according to "Arrêté du Juin 2014" laying down the list of plants, authorized in food supplements



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Analytical Check

feature	method	limits	value	unit
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Storage conditions: Store in a cool, dry place!

Digitally signed by Anja Cawelius
Reason: Quality Control
Date: 2017.07.05'

The product meets specifications no. 16.192.03/66.203.04; date of analysis: 2017.07.05

This computerized CoA has digital signature validated by Nature'.

The data in this report of analysis have been determined carefully and to the best of our knowledge. Depending on transport and storage conditions the indicated data can be subject to certain changes which are outside of our influence. Hence the report has not the meaning of a guaranty in the legal sense and does not dispense the customer from making his own quality control before using the product.