



Certificate of Analysis

Ginger CO2-to

Batch #GE-58822

production: September 2018 retest: September 2021
lab no. 25669
raw material: *Zingiber officinalis* - Rhizome, dried
country of origin of rawmaterial: Nigeria
country of origin of product: Germany
D/E - ratio: 17 - 20 kg raw material yield 1 kg product.

Sensory Check

feature	reference	result
Appearance:	brown clear liquid	meets
Odour:	characteristic pungent smell	meets

Analytical Check

feature	method	limits	value	unit
Content of essential oil	21.006.01, Distillation, gravimetric	30 - 50	41,6	% (g/ 100g)
Zingerone	21.027.05, HPLC	< 1	0.023	%
6-Gingerol	21.027.05, HPLC	14 - 20	16.5	%
8-Gingerol	21.027.05, HPLC	n.s.	3.6	%
6-Shogaol	21.027.05, HPLC	n.s.	2.0	%
10-Gingerol	21.027.05, HPLC	n.s.	5.3	%
8-Shogaol	21.027.05, HPLC	n.s.	0.34	%
10-Shogaol	21.027.05, HPLC	n.s.	0.28	%
Sum of Gingerols	21.027.05, HPLC	n.s.	25.4	%
Sum of Shogaols	21.027.05, HPLC	< 5	2.6	%
Sum of pungent compounds	21.027.05, HPLC	24 - 35	28.1	%
Relative composition of the essential oil:	GCMS, 100 % Method			
Neral/Geranial	GCMS, 21.225.01	n.s.	3.6 (1.4 / 2.2)	%
ar-Curcumene	GCMS, 21.225.01	n.s.	7.1	%
alpha Zingiberene	GCMS, 21.225.01	n.s.	27.3	%
alpha Farnesene	GCMS, 21.225.01	n.s.	7.7	%
beta Bisabolene	GCMS, 21.225.01	n.s.	6.2	%
Sesquiphellandrene	GCMS, 21.225.01	n.s.	12.4	%

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



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feature	method	limits	value unit
Aflatoxine B1	21.193.02, HPLC	EC No. 1881/2006, EC No. 165/2010	meets ppb
Total Aflatoxines B1,B2,G1,G2	21.193.02, HPLC	EC No. 1881/2006, EC No. 165/2010	meets ppb
Ochratoxin A	21.197.01, HPLC	EC No. 1881/2006, EC No. 594/2012	meets ppb
Pesticides	external analysis	EC 396/2005	meets
Refractive index (20°C)	21.080.03, Abbe-Refractometer	1,500 - 1,510	1,508
Density (20°C)	21.024.03, Pycnometer	0,950 - 0,990	0,9664 g/cm ³
Content of water	21.220.01, Karl Fischer method	n.s.	0,86 %
Monitoring of substances*: Methyleugenol	GCMS	n.s.	n.d. (<0,001) %

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

Storage conditions: Store in a cool, dry place!



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The product meets specifications no. 16.090.09/66.006.11; date of analysis: 2018.09.14

This computerized CoA has digital signature validated by Nature's Gift.

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.