Date : April 13, 2021

CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 21D06-PTH24
Customer identification : Camphor - Spain - C30106205R
Type : Essential oil
Source : *Cinnamomum camphora*
Customer : Plant Therapy

ANALYSIS

Method: PC-MAT-014 ✳ISO - Analysis of the composition of an essential oil or other volatile liquid by FAST GC-FID (in French); identifications validated by GC-MS.
Analyst : Sylvain Mercier, M. Sc., Chimiste
Analysis date : April 12, 2021

Checked and approved by :

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

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✳ISO 17025:2017
MÉTHODE CERTIFIÉE
CERTIFIED METHOD

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PHYSICOCHEMICAL DATA

Physical aspect: Clear liquid
Refractive index: 1.4689 ± 0.0003 (20 °C; method PC-MAT-016)

CONCLUSION

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

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ANALYSIS SUMMARY – CONSOLIDATED CONTENTS

New readers of similar reports are encouraged to read table footnotes at least once.

Identification	%	Class
Isovaleral	tr	Aliphatic aldehyde
Isoamyl alcohol	0.04	Aliphatic alcohol
Toluene	tr	Simple phenolic
Hashishene	0.03	Monoterpene
Tricyclene	0.03	Monoterpene
α-Thujene	0.22	Monoterpene
α-Pinene	11.86	Monoterpene
Camphene	0.21	Monoterpene
α-Fenchene	0.04	Monoterpene
Thuja-2,4(10)-diene	0.01	Monoterpene
Sabinene	12.26	Monoterpene
β-Pinene	5.58	Monoterpene
6-Methyl-5-hepten-2-one	0.02	Aliphatic ketone
Myrcene	4.86	Monoterpene
2-Carene	0.17	Monoterpene
α-Phellandrene	1.61	Monoterpene
Octanal	0.02	Aliphatic aldehyde
Pseudolimonene	0.17	Monoterpene
Δ3-Carene	0.11	Monoterpene
α-Terpinene	2.25	Monoterpene
Carvomenthene	0.02	Aliphatic alcohol
para-Cymene	5.88	Monoterpene
Limonene	13.79	Monoterpene
1,8-Cineole	37.27	Monoterpenic ether
(*Z*)-β-Ocimene	0.01	Monoterpene
(*E*)-β-Ocimene	0.05	Monoterpene
γ-Terpinene	2.10	Monoterpene
cis-Sabinene hydrate	0.03	Monoterpenic alcohol
cis-Linalool oxide (fur.)	0.01	Monoterpenic alcohol
Fenchone	0.04	Monoterpenic ketone
Terpinolene	0.12	Monoterpene
trans-Linalool oxide (fur.)	0.02	Monoterpenic alcohol
Linalool	0.02	Monoterpenic alcohol
trans-Limonene oxide	0.01	Monoterpenic ether
Camphor	0.01	Monoterpenic ketone
trans-para-Menth-2-en-1-ol	0.01	Monoterpenic alcohol
Unknown	0.05	Unknown
Unknown	0.02	Unknown
Terpinen-4-ol	0.01	Monoterpenic alcohol
Cryptone	0.04	Normonoterpenic ketone
α-Terpineol	0.01	Monoterpenic alcohol
Unknown	0.01	Unknown
Unknown	0.03	Unknown
trans-Ascaridole glycol	0.01	Monoterpenic alcohol
cis-Ascaridole glycol	0.01	Monoterpenic alcohol

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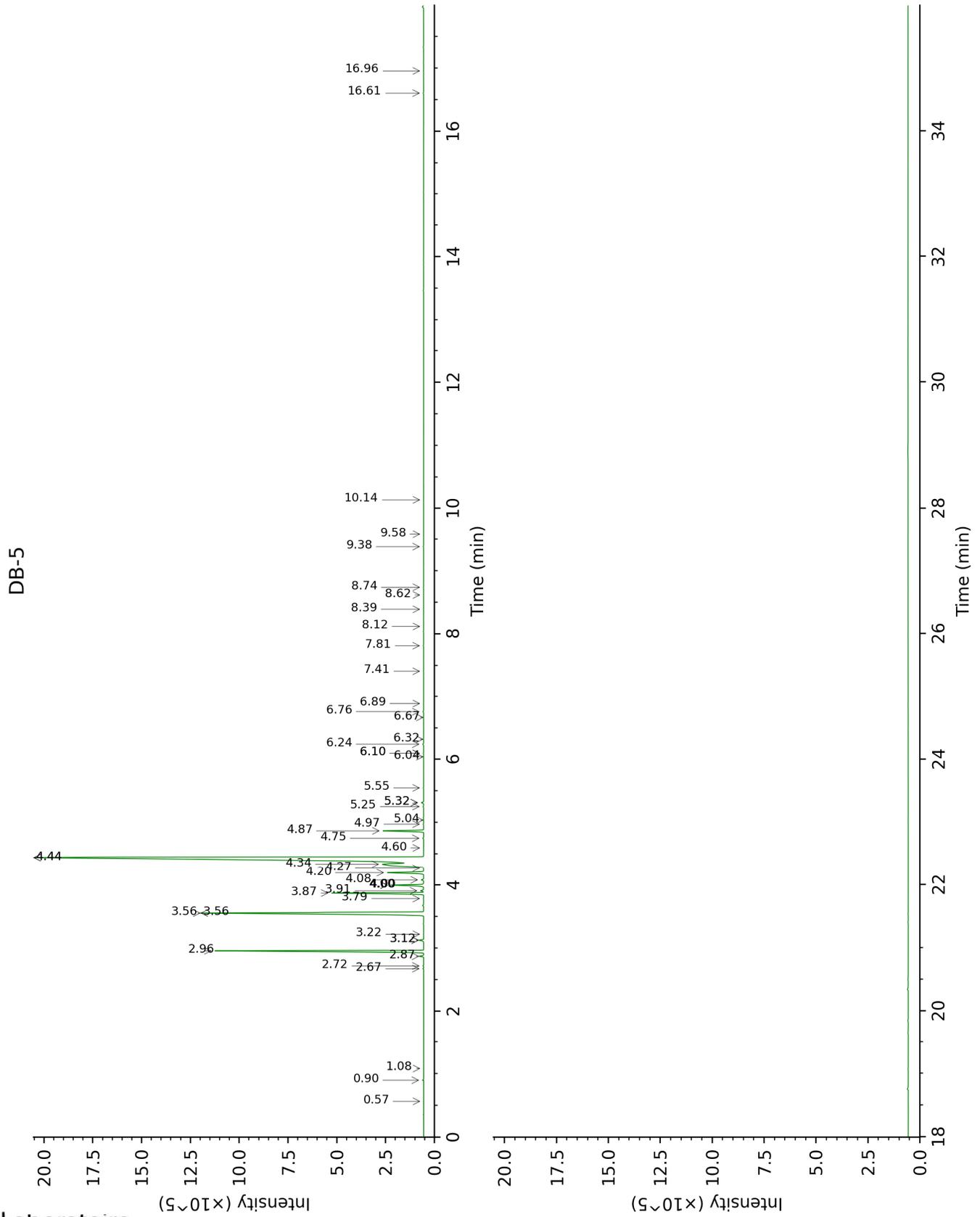| Unknown	0.01	Unknown
para-Menth-5-en-1,2-diol isomer III	0.01	Monoterpenic alcohol
Unknown	0.03	Unknown
α-Copaene	0.01	Sesquiterpene
β-Caryophyllene	0.01	Sesquiterpene
meta-Camphorene	0.03	Diterpene
para-Camphorene	0.01	Diterpene
Consolidated total	**99.18%**	

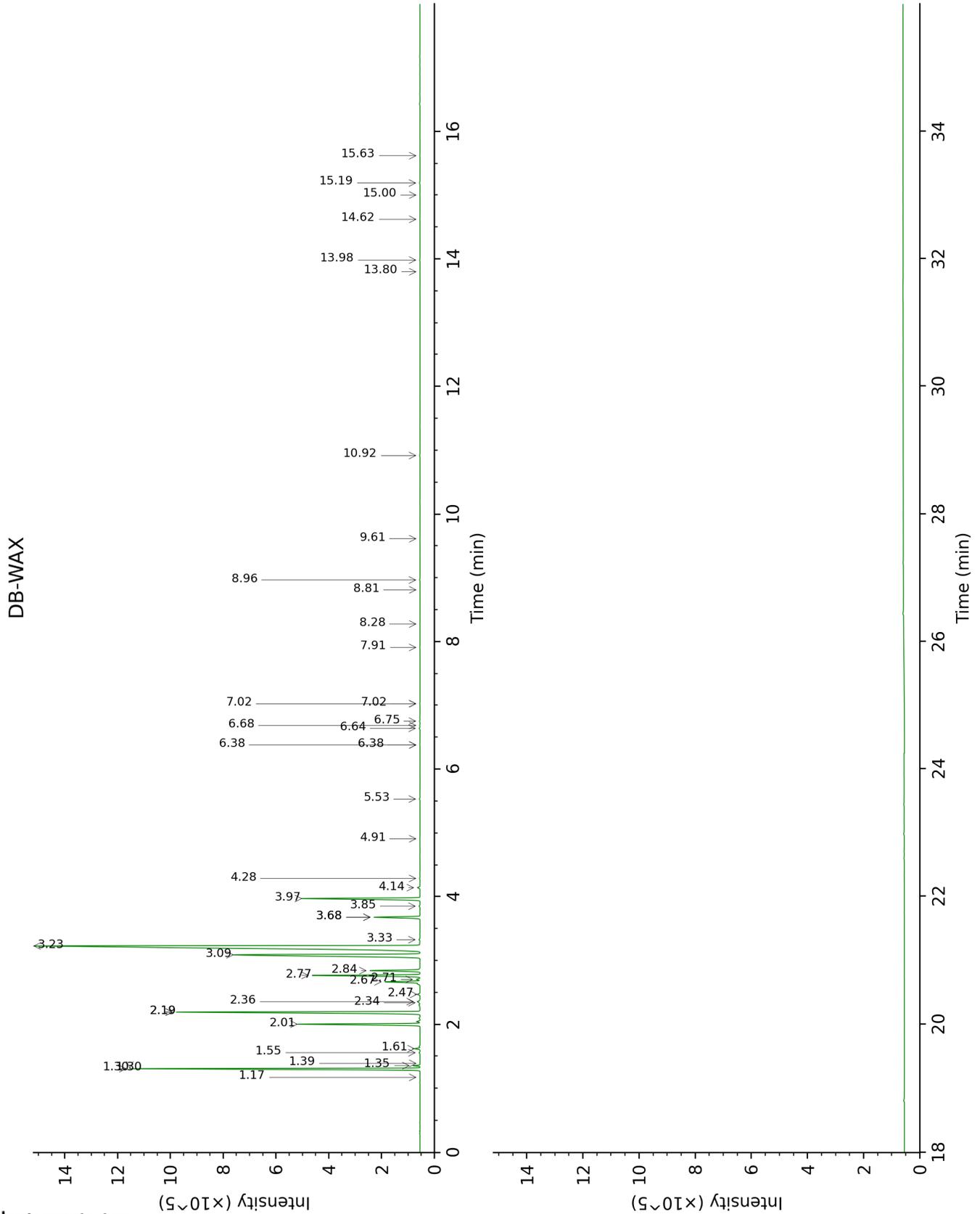tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

About "consolidated" data: The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm is set to prioritize data from the most standard DB-5 column, and smallest values so as to avoid overestimating individual content. This process is semi-automatic. Advanced users are invited to consult the "Full analysis data" table after the chromatograms in this report to access the full untreated data and perform their own calculations if needed.

Unknowns: Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

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DB-5

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DB-WAX

Time (min)

Intensity (×10^5)

Time (min)

Intensity (×10^5)

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FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Isovaleral	0.57	640	tr			
Isoamyl alcohol	0.90	731	0.04	3.33	1180	0.06
Toluene	1.08	759	tr	1.38	1005	tr
Hashishene	2.67	914	0.03	1.30*	995	11.96
Tricyclene	2.72	917	0.03	1.17	972	0.01
α-Thujene	2.87	927	0.22	1.35	1002	0.22
α-Pinene	2.96	933	11.86	1.30*	995	[11.96]
Camphene	3.12*	944	0.25	1.61	1028	0.21
α-Fenchene	3.12*	944	[0.25]	1.55	1022	0.04
Thuja-2,4(10)-diene	3.22	951	0.01	2.20*	1087	12.31
Sabinene	3.56*	973	17.84	2.20*	1087	[12.31]
β-Pinene	3.56*	973	[17.84]	2.01	1068	5.58
6-Methyl-5-hepten-2-one	3.78	989	0.02	4.91	1300	0.01
Myrcene	3.87	995	4.86	2.77	1136	4.90
2-Carene	3.91	997	0.17	2.36	1103	0.13
α-Phellandrene	4.00*	1003	1.76	2.67	1128	1.61
Octanal	4.00*	1003	[1.76]	4.28	1253	0.02
Pseudolimonene	4.00*	1003	[1.76]	2.70	1131	0.17
Δ3-Carene	4.08	1009	0.11	2.47	1112	0.12
α-Terpinene	4.20	1016	2.25	2.84	1142	2.26
Carvomenthene	4.27	1021	0.02	2.34	1102	0.02
para-Cymene	4.34	1025	5.88	3.97	1230	5.87
Limonene	4.44*	1032	51.20	3.09	1161	13.79
1,8-Cineole	4.44*	1032	[51.20]	3.23	1172	37.27
(*Z*)-β-Ocimene	4.60	1041	0.01	3.68*	1208	2.11
(*E*)-β-Ocimene	4.75	1051	0.05	3.85	1221	0.04
γ-Terpinene	4.87	1059	2.10	3.68*	1208	[2.11]
cis-Sabinene hydrate	4.98	1065	0.03	6.75	1431	0.02
cis-Linalool oxide (fur.)	5.04	1069	0.01	6.38*	1403	0.01
Fenchone	5.25	1083	0.04	5.53	1342	0.03
Terpinolene	5.32*	1087	0.12	4.14	1242	0.12
trans-Linalool oxide (fur.)	5.32*	1087	[0.12]	6.68	1426	0.02
Linalool	5.55	1102	0.02	7.91	1519	0.02
trans-Limonene oxide	6.04	1133	0.01	6.38*	1403	[0.01]
Camphor	6.10*	1137	0.02	7.02*	1452	0.02
trans-para-Menth-2-en-1-ol	6.10*	1137	[0.02]	8.81	1589	0.01
Unknown [m/z 109, 124 (45), 119 (41), 43 (35), 91 (28), 95 (25)…]	6.24	1146	0.05	6.64	1423	0.04

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	R.T.	R.I.	%	R.T.	R.I.	%
Unknown [m/z 71, 85 (48), 43 (42), 57 (38), 58 (37), 41 (21), ... 155 (12)]	6.32	1151	0.02			
Terpinen-4-ol	6.67	1174	0.01			
Cryptone	6.76	1179	0.04	8.96	1601	0.02
α-Terpineol	6.89	1188	0.01	9.61	1654	0.01
Unknown [m/z 43, 97 (72), 41 (44), 71 (27), 55 (26), 82 (25)...]	7.41	1222	0.01			
Unknown [m/z 43, 97 (69), 107 (46), 41 (28), 55 (21), 109 (20)...]	7.81	1249	0.03	10.92	1764	0.03
trans-Ascaridole glycol	8.12	1270	0.01	13.98	2043	0.02
cis-Ascaridole glycol	8.39	1288	0.01	14.62	2105	0.01
Unknown [m/z 112, 97 (93), 83 (60), 43 (46), 41 (20), 69 (19)...]	8.62	1303	0.01			
para-Menth-5-en-1,2-diol isomer III	8.74	1312	0.01	15.00	2143	0.01
Unknown [m/z 43, 95 (62), 107 (45), 110 (41), 55 (28), 67 (25)...]	9.38	1357	0.03	13.80	2025	0.01
α-Copaene	9.58	1371	0.01	7.02*	1452	[0.02]
β-Caryophyllene	10.14	1411	0.01	8.28	1548	0.01
meta-Camphorene	16.61	1951	0.03	15.19	2162	0.03
para-Camphorene	16.96	1985	0.01	15.63	2206	0.01
Total identified	**99.12%**			**99.12%**		
Total reported	**99.26%**			**99.20%**		

*: Two or more compounds are coeluting on this column

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

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied
R.T.: Retention time (minutes)
R.I.: Retention index

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