Nature's Gift®

316 Old Hickory Blvd East, Madison, TN 37115
tel (615)612-4270 fax (615)860-9171
sold@naturesgift.com
Balancing Body, Mind and Spirit with Pure Essential Oils
Since 1995
www.naturesgift.com

German Chamomile

Matricaria recutita

Batch No. UK-59270
United Kingdom

Monoterpenes	3.46%
trans-β-ocimene	1.81
α pinene	0.43
cis-β-ocimene	0.32
terpinolene	0.20
γ terpinene	0.19
limonene	0.15
para cymene	0.14
β pinene	0.05
sabinene	0.05
β myrcene	0.05
β phellandrene	0.05
camphene	0.02

Monoterpenols	0.32%
dendrolasin	0.27
terpinen-4-ol	0.03
linalool	0.02

Ethers	18.44%
α-bisabolone oxide A	8.62
α bisabolol oxide B	7.03
sesquiterpenic epoxide	2.25
bisabolol oxide isomer	0.34
1,8 cineole	0.10
bisabolol C oxide	0.05
caryophyllene epoxide	0.05

Esters	0.54%
2-methylbutyl angelate	0.13
ethyl 2-methylbutyrate	0.08
unknown	0.08
isobutyl angelate	0.08
matricaria ester	0.03
aliphatic ester	0.02
lavandulyl acetate	0.02
(Z) 3-hexenyl acetate	0.02
isoamyl angelate	0.02
octyl acetate	0.02
phenylmethyl isovalerate	0.02
terpinic ester	0.02

Sesquiterpenes	66.82%
(E) β farnesene	43.30
bicyclogermacrene	6.47
(E,E) α farnesene	5.46
germacrene D	3.87
Chamazulene	3.20
β selinene	0.51
β caryophyllene	0.34
α isocomene	0.31
allo-aromadendrene	0.28
unknown	0.28
α humulene	0.26
α-copaene	0.22
bicycloelemene	0.20
unknown	0.20
β bisabolene	0.16
ledene	0.15
sesquiterpene	0.14
α-curcumene	0.13
β elemene	0.11
α acoradiene	0.10
aromadendrene	0.09
α zingiberene	0.09
modhephene	0.08
α muurolene	0.08
γ curcumene	0.08
α cubebene	0.07
silphinene	0.05
α longipinene	0.05
γ cadinene	0.05
γ muurolene	0.05
preziza-7-ene	0.04
α-gurjunene	0.04
β 1 cubebene	0.04
δ cadinene	0.04
muuroladiene isomer	0.04
(E) α bisabolene	0.04
α calacorene	0.04
curcumenic compound	0.03
β isocomene	0.03
β maaliene	0.03
epsilon cadinene	0.03
α (E) bergamotene	0.02
(Z) β farnesene	0.02

Sesquiterpenols	3.92%
spathulenol	1.25
β eudesmol	0.96
santalol isomer	0.70
α-bisabolol	0.36
nerolidol	0.25
ledol	0.10
globulol	0.08
viridiflorol	0.06
τ cadinol	0.06
δ cadinol	0.05
palustrol	0.03
(E)-pinocarveol	0.02

Aldehydes	0.87%
pentadecanal	0.58
nonanal	0.12
2,4 decadienal	0.06
safranal	0.04
heptanal	0.03
decanal	0.02
hexanal	0.02

Ketones	1.56%
artemisia ketone	0.92
trimethyl pentadecanone	0.37
6-methyl 5-hepten-2-one	0.07
(E) geranyl acetone	0.07
ionone isomer	0.06
pinocarvone	0.04
ketonic compound	0.03

Phenols	0.04%
eugenol	0.04

Production Method: Steam distill, flowers
Date of Analysis: 8/16/2021

316 Old Hickory Blvd East, Madison, TN 37115
tel (615)612-4270 fax (615)860-9171
sold@naturesgift.com
Balancing Body, Mind and Spirit with Pure Essential Oils
Since 1995
www.naturesgift.com

German Chamomile

Matricaria recutita

Batch No. UK-59161

Other	4.06%
aromatic compound	0.78
unknown compounds	0.58
bergamotol isomer	0.26
phytol	0.21
sesquirosefuran	0.20
2-pentyl-furan	0.19
α nootkatol	0.19
pentadecane	0.17
(E) tonghaosu	0.16
benzoic acid	0.16
yomogi alcohol	0.14
pentacosane	0.12
artemisia alcohol	0.11
aliphatic alcohol	0.09
1-nonene	0.07
terpene isomer	0.06
(E) 2-(2-pentenyl) furan	0.05
tricosane	0.05
tridecane	0.05
thuyopsene	0.04
capric acid	0.04
myristic acid	0.04
oxide compound	0.03
1-octanol	0.03
1hexanol	0.03
artemisia alcoholl isomer	0.03
heptacosane	0.03
naphtalenic compound	0.03
1-nonanol	0.02
lauric acid	0.02
palmitic acid	0.02
phenolic compound	0.02
tridecane	0.02
undecane	0.02

Production Method: Steam distill, flowers
Date of Analysis: 8/16/2021

Customer :

Nature's Gift

For the attention of Marge Clark
316 Old Hickory Blvd. East
Madison, TN 37115
Phone 615-612-4270

Sample Nature : ESSENTIAL OIL
Botanical name : CHAMAEMELUM RECUTITA
Sample name : GERMAN CHAMOMILE RG
Batch number : GC21.90
Origin : -
Plant part : FLOWER
Our reference : FG66

Receipt : 09/08/2021
Analysis date : 10/08/2021
Packaging : Blue flask of 5 ml
Requested analysis : GChe
Sample storage : 1 year - room temperature

The above information is provided by the customer and sampling is under his responsibility

Comments and conclusions :

Report validated by :

Daniel Dantin - *Laboratory director*

Report written by :

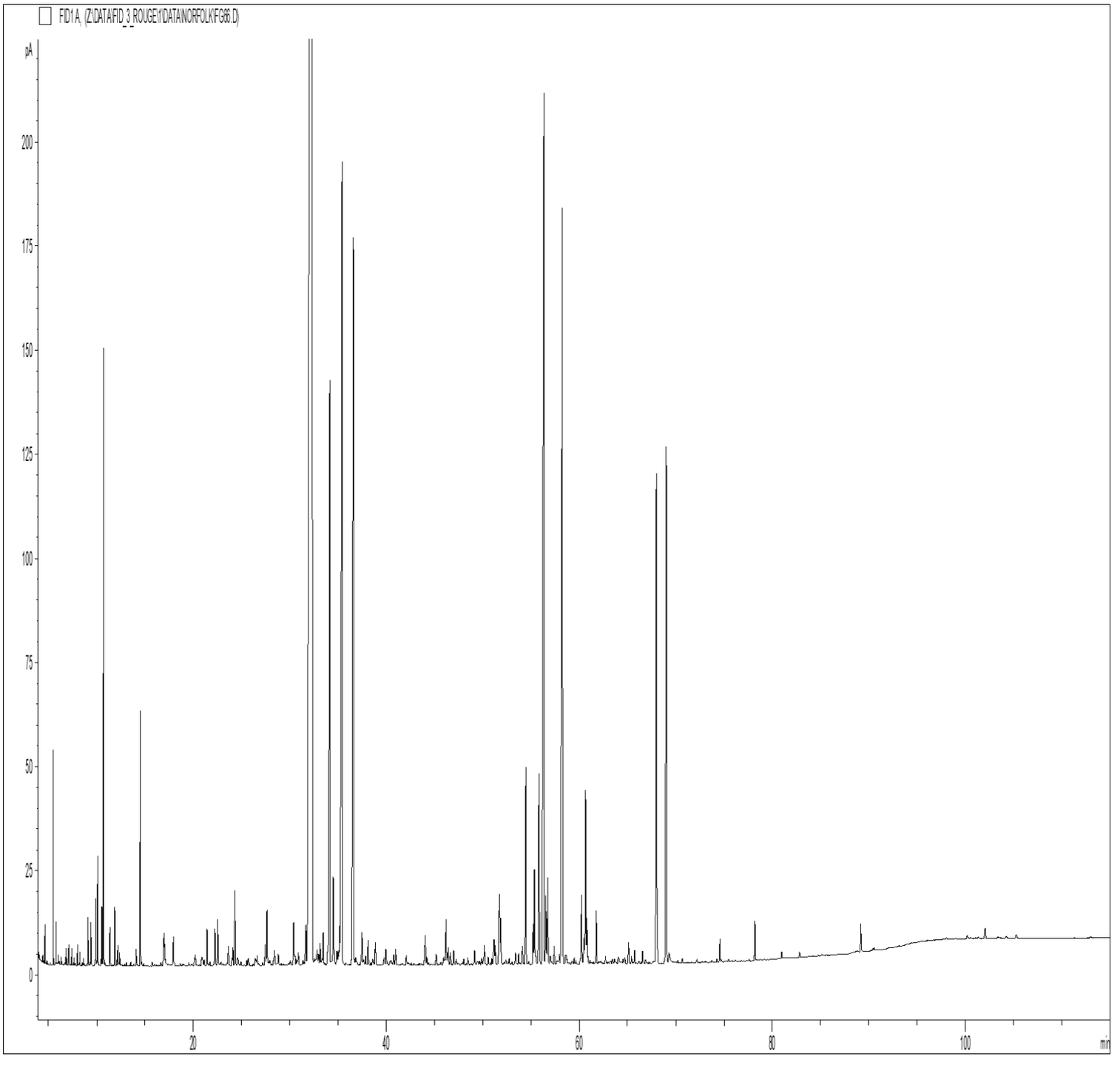
Lucie Dubrunfaut - *Analyst technician*

GAS CHROMATOGRAPHY (according to the norm NF ISO 11024)

Analysis conditions :

. GC/MS Agilent 7890 / 5977 (Red) - Column : VF WAX (polar) 60 m * 0.25 mm * 0.25 µm
. GC/FID Agilent 6890 – Column : VF WAX (polar) 60 m * 0.25 mm * 0.25 µm
. Temperature program : (2S) 60°C - 2°C/min until 250°C - 20 min to 250°C
. Carrier gas : He (23 psis/MS – 30 psis/FID)
. Sample injection / split : 1 µl of 10 % solution in hexane
. Mass range : 30 to 350 - Oil compounds are identified by a combination of retention times and mass spectra library (our own database and NIST commercial database).
. Percentages are calculated from GC/FID peaks areas without using corrections factors.
. Peaks identification limit : 0.015 % Peaks integration limit : 0.015 %

Chromatographic profile :



Identification results : GERMAN CHAMOMILE RG - BATCH N° GC21.90					
Peaks	**RT (min)**	**Compound name**	**%**	**Internal Standard (%)**	**Allergens (%)**
1	4.63	1-NONENE	0.07		
2	5.48	alpha-PINENE	0.43		
3	5.77	ETHYL 2-METHYLBUTYRATE	0.08		
4	5.99	CAMPHENE	0.02		
5	6.31	HEXANAL	0.02		
6	6.73	UNDECANE	0.02		
7	6.85	beta-PINENE	0.05		
8	7.09	SABINENE	0.05		
9	7.40	PROPYL 2-METHYLBUTYRATE	0.04		
10	7.62	ALIPHATIC ALCOHOL	0.02		
11	7.99	beta-MYRCENE	0.05		
12	8.24	TERPENE ISOMER	0.04		
13	8.64	HEPTANAL	0.03		
14	9.09	LIMONENE	0.15		0.15
15	9.39	1,8-CINEOLE	0.10		
16	9.45	beta-PHELLANDRENE	0.05		
17	9.90	FURAN, 2-PENTYL-	0.19		
18	10.04	TERPENE ISOMER	0.02		
19	10.10	cis-beta-OCIMENE	0.32		
20	10.45	PHENOLIC COMPOUND Mw=122	0.02		
21	10.54	gamma-TERPINENE	0.19		
22	10.71	trans-beta-OCIMENE	1.81		
23	11.37	p-CYMENE	0.14		
24	11.87	TERPINOLENE	0.20		
25	12.11	TRIDECANE	0.02		
26	12.21	ISOBUTYL ANGELATE	0.08		
27	12.39	trans-2-(2-PENTENYL)FURAN	0.05		
28	13.54	cis-3-HEXENYL ACETATE	0.02		
29	14.10	5-HEPTEN-2-ONE, 6-METHYL-	0.07		
30	14.53	ARTEMISIA KETONE	0.92		
31	14.66	1-HEXANOL	0.03		
32	15.76	ALIPHATIC ESTER	0.02		
33	16.67	ISOAMYL ANGELATE	0.02		
34	16.95	NONANAL	0.12		
35	17.02	2-METHYLBUTYL ANGELATE	0.13		
36	17.12	TETRADECANE	0.05		
37	17.91	COMPOUND Mw=150	0.02		
38	17.95	YOMOGI ALCOHOL	0.14		
39	20.17	ALIPHATIC ALCOHOL	0.04		
40	20.22	alpha-CUBEBENE	0.07		
41	20.89	alpha-LONGIPINENE	0.05		
42	20.96	SILPHINENE	0.05		
43	21.17	AROMATIC COMPOUND	0.02		
44	21.44	PENTADECANE	0.17		
45	21.75	OCTYL ACETATE	0.02		
46	22.25	BICYCLOELEMENE	0.20		
47	22.54	alpha-COPAENE	0.22		
48	22.88	DECANAL	0.02		
49	23.65	ARTEMISIA ALCOHOL	0.11		
50	24.03	alpha-GURJUNENE	0.04		

Identification results : GERMAN CHAMOMILE RG - BATCH N° GC21.90

Peaks	RT (min)	Compound name	%	Internal Standard (%)	Allergens (%)
51	24.12	MODHEPHENE	0.08		
52	24.33	alpha-ISOCOMENE	0.31		
53	24.40	COMPOUND Mw=180	0.08		
54	24.60	beta1-CUBEBENE	0.04		
55	24.64	beta-MAALIENE	0.03		
56	24.96	LINALOOL	0.02		0.02
57	25.55	1-OCTANOL	0.03		
58	25.72	PINOCARVONE	0.04		
59	25.78	COMPOUND Mw=162	0.02		
60	26.43	epsilon-CADINENE	0.03		
61	26.51	beta-ISOCOMENE	0.03		
62	26.64	OXIDE COMPOUND	0.05		
63	27.21	alpha-trans-BERGAMOTENE	0.02		
64	27.45	beta-ELEMENE	0.11		
65	27.66	beta-CARYOPHYLLENE	0.34		
66	27.86	COMPOUND Mw=152	0.02		
67	27.96	TERPINENE-4-OL	0.03		
68	28.34	SESQUITERPENE	0.02		
69	28.43	AROMADENDRENE	0.09		
70	28.80	LAVANDULYL ACETATE	0.02		
71	28.83	THUYOPSENE	0.04		
72	30.06	PREZIZA-7-ENE	0.04		
73	30.41	ALLO-AROMADENDRENE	0.28		
74	30.53	SAFRANAL	0.04		
75	30.69	ARTEMISIA ALCOHOL ISOMER	0.03		
76	30.85	trans-PINOCARVEOL	0.02		
77	30.91	SESQUITERPENE	0.07		
78	31.38	1-NONANOL	0.02		
79	31.67	alpha-HUMULENE	0.26		
80	32.35	**E-beta-FARNESENE**	**43.30**		
81	32.66	SESQUITERPENE Mw=202	0.02		
82	32.84	alpha-ACORADIENE	0.10		
83	33.01	gamma-MUUROLENE	0.05		
84	33.16	gamma-CURCUMENE	0.08		
85	33.36	Z-beta-FARNESENE	0.02		
86	33.48	LEDENE	0.15		
87	33.94	MUUROLADIENE ISOMER	0.04		
88	34.16	**GERMACRENE D**	**3.87**		
89	34.52	beta-SELINENE	0.51		
90	34.88	alpha-ZINGIBERENE	0.09		
91	35.06	alpha-MUUROLENE	0.08		
92	35.17	beta-BISABOLENE	0.16		
93	35.43	**BICYCLOGERMACRENE**	**6.47**		
94	36.61	**E,E-alpha-FARNESENE**	**5.46**		
95	36.66	delta-CADINENE	0.04		
96	36.82	gamma-CADINENE	0.05		
97	36.96	SESQUITERPENE Mw=202	0.03		
98	37.48	COMPOUND Mw=202	0.22		
99	37.68	trans-alpha-BISABOLENE	0.04		
100	37.88	AROMATIC COMPOUND	0.05		

Identification results : GERMAN CHAMOMILE RG - BATCH N° GC21.90

Peaks	RT (min)	Compound name	%	Internal Standard (%)	Allergens (%)
101	38.13	alpha-CURCUMENE	0.13		
102	38.61	AROMATIC COMPOUND	0.04		
103	38.66	AROMATIC COMPOUND	0.02		
104	38.87	AROMATIC COMPOUND	0.13		
105	39.76	2,4-DECADIENAL	0.06		
106	39.94	SESQUITERPENE Mw=202	0.08		
107	39.99	COMPOUND Mw=220	0.03		
108	40.46	OXIDE COMPOUND	0.03		
109	40.49	NAPHTALENIC COMPOUND	0.03		
110	40.76	COMPOUND Mw=196	0.05		
111	40.98	SESQUITERPENE Mw=202	0.08		
112	42.06	E-GERANYL ACETONE	0.07		
113	42.28	PHENYLMETHYL ISOVALERATE	0.02		
114	43.94	SESQUITERPENIC EPOXIDE	0.02		
115	44.01	SESQUIROSEFURAN	0.20		
116	44.19	alpha-CALACORENE	0.04		
117	45.16	SESQUITERPENIC EPOXIDE	0.07		
118	45.64	TERPENIC ESTER	0.02		
119	45.95	SESQUITERPENIC EPOXIDE	0.04		
120	46.05	SESQUITERPENIC EPOXIDE	0.02		
121	46.18	DENDROLASIN	0.27		
122	46.34	PALUSTROL	0.03		
123	46.40	SESQUITERPENIC EPOXIDE	0.10		
124	46.64	IONONE ISOMER	0.06		
125	46.96	SESQUITERPENIC EPOXIDE	0.07		
126	47.24	SESQUITERPENIC EPOXIDE	0.02		
127	48.03	CURCUMENIC COMPOUND	0.03		
128	48.44	CARYOPHYLLENE EPOXIDE	0.05		
129	49.14	BERGAMOTOL ISOMER	0.08		
130	49.41	SESQUITERPENOL	0.02		
131	49.66	SESQUITERPENIC EPOXIDE	0.02		
132	49.87	CHRYSANTHEMOL ISOMER	0.04		
133	50.10	ALIPHATIC ALCOHOL	0.03		
134	50.16	AROMATIC COMPOUND	0.11		
135	50.55	AROMATIC COMPOUND	0.05		
136	50.93	AROMATIC COMPOUND	0.03		
137	51.11	SESQUITERPENIC EPOXIDE	0.05		
138	51.16	AROMATIC COMPOUND Mw=178	0.16		
139	51.29	LEDOL	0.10		
140	51.71	PENTADECANAL	0.58		
141	51.87	NEROLIDOL	0.25		
142	52.40	AROMATIC COMPOUND Mw=200	0.03		
143	52.74	KETONIC COMPOUND	0.03		
144	53.39	GLOBULOL	0.08		
145	53.72	VIRIDIFLOROL	0.06		
146	54.11	SESQUITERPENIC EPOXIDE	0.11		
147	54.45	SESQUITERPENIC EPOXIDE	1.05		
148	55.22	SANTALOL ISOMER	0.21		
149	55.36	SANTALOL ISOMER	0.49		
150	55.48	BISABOLOL C OXIDE	0.05		

Identification results : GERMAN CHAMOMILE RG - BATCH N° GC21.90

Peaks	RT (min)	Compound name	%	Internal Standard (%)	Allergens (%)
151	55.82	SPATHULENOL	1.25		
152	56.32	**alpha-BISABOLOL B OXIDE**	**7.03**		
153	56.53	PENTADECANONE, TRIMETHYL-	0.37		
154	56.72	SESQUITERPENIC EPOXIDE	0.44		
155	57.00	T-CADINOL	0.06		
156	57.40	BISABOLOL OXIDE ISOMER	0.10		
157	57.93	EUGENOL	0.04		0.04
158	58.23	**alpha-BISABOLONE A OXIDE**	**5.39**		
159	58.29	delta-CADINOL	0.05		
160	58.57	COMPOUND Mw=222	0.04		
161	58.63	SESQUITERPENOL	0.04		
162	59.23	COMPOUND Mw=206	0.03		
163	59.47	SESQUITERPENOL	0.03		
164	59.64	COMPOUND Mw=250	0.02		
165	60.22	alpha-BISABOLOL	0.36		
166	60.50	alpha-NOOTKATOL	0.19		
167	60.65	beta-EUDESMOL	0.96		
168	60.77	BISABOLOL OXIDE ISOMER	0.24		
169	60.89	SESQUITERPENOL	0.04		
170	61.10	SESQUITERPENIC EPOXIDE	0.02		
171	61.75	BERGAMOTOL ISOMER	0.26		
172	62.71	CAPRIC ACID	0.04		
173	63.18	SESQUITERPENIC EPOXIDE	0.02		
174	63.63	SESQUITERPENIC EPOXIDE	0.02		
175	64.05	AROMATIC COMPOUND	0.06		
176	64.55	MATRICARIA ESTER	0.03		
177	64.73	AROMATIC COMPOUND	0.03		
178	65.10	TRICOSANE	0.15		
179	65.39	COMPOUND Mw=220	0.04		
180	65.72	SESQUITERPENIC EPOXIDE	0.07		
181	66.19	SESQUITERPENIC EPOXIDE	0.02		
182	66.55	SESQUITERPENIC EPOXIDE	0.07		
183	66.85	COMPOUND Mw=218	0.02		
184	67.63	AROMATIC COMPOUND Mw=234	0.02		
185	67.76	SESQUITERPENIC EPOXIDE	0.02		
186	67.98	**CHAMAZULEN**	**3.20**		
187	69.02	**alpha-BISABOLOL A OXIDE**	**3.23**		
188	69.29	BENZOIC ACID	0.16		
189	70.68	AROMATIC COMPOUND	0.03		
190	72.17	LAURIC ACID	0.02		
191	74.57	PENTACOSANE	0.12		
192	78.19	PHYTOL	0.21		
193	80.96	MYRISTIC ACID	0.04		
194	82.81	HEPTACOSANE	0.03		
195	89.17	trans-TONGHAOSU	0.16		
196	90.55	PALMITIC ACID	0.02		
		TOTAL	**99.91**		**0.20**