

CERTIFICATE OF ANALYSIS

SAMPLE NAME		Pelargonium graveolens	
FORM		Oil	
CUSTOMER NAME		Buckley & Phillips Aromatics	
CERTIFICATION DATE		04 July 2019	
CUSTOMER REFERENCE		Batch: 32842/15 Ref: 1200060	
ARL JOB #	A191478	LAB REF. #	ARL1904038
ANALYSIS	GCFID - Area%	METHOD	ARL-TM101

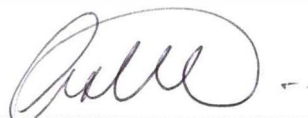
TEST	ISO 4731** SPECIFICATION				RESULTS
	NORTH AFRICA	CHINA	BOURBON	MADAGASCAR	
Area %					
cis rose oxide	0.7 - 1.5	1.3 - 3.5	0.3 - 1.1	0.4 - 1.4	1.32
trans rose oxide	0.3 - 0.6	0.5 - 1.5	0.1 - 0.5	0.1 - 0.6	0.23
menthone	<2.1	<2.5	<2.0	<2.0	0.77
iso menthone	4.0 - 8.0	4.0 - 7.0	0.5 - 10.0	5.0 - 10.0	6.34
linalool	4.0 - 8.5	2.0 - 4.5	0.8 - 11.0	4.0 - 10.0	4.51
guaia-6,9-diene	0.5	4.0 - 7.0	5.0 - 8.5	5.0 - 9.0	0.31
citronellyl formate	4.0 - 8.0	7.0 - 12.0	6.5 - 11.0	6.5 - 11.0	6.78
α -terpineol	0.3 - 0.6	0.1 - 0.5	0.3 - 1.2	0.3 - 1.0	0.36
geranyl formate	2.0 - 7.0	1.0 - 3.0	4.0 - 8.0	3.8 - 7.0	2.49
citronellol	25.0 - 36.0	32.0 - 43.0	18.0 - 26.0	18.0 - 26.0	32.51
geraniol	1.0 - 18.0	5.0 - 12.0	12.0 - 20.0	10.0 - 20.0	11.92
geranyl butyrate	0.7 - 2.0	0.4 - 1.0	0.7 - 2.0	0.7 - 1.7	0.97
10-epi- γ -eudesmol	3.0 - 6.2	nd	nd	nd	4.35
geranyl tiglate	0.9 - 2.0	1.0 - 1.6	0.7 - 2.0	0.7 - 2.0	1.38
β -phenylethyl tiglate	0.5 - 1.2	0.4 - 1.0	0.4 - 1.0	0.4 - 1.0	1.43

* Assay by GC (FID detection - area percent report) nd - denotes not detected

** ISO 4731 - Oil of Geranium (Pelargonium x spp.)



Samantha Morrow
ANALYTICAL OFFICER



Ashley Dowell
MANAGER - ARL

Sample Name: Pelargonium graveolens 32842/15 1200060

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Area Percent Report
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Sorted By : Signal
Calib. Data Modified : 5/30/2018 12:20:16 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	20.139	BB	0.0516	7.52014	0.23495	trans rose oxide
2	20.456	BV	0.0486	42.27422	1.32074	cis rose oxide
3	20.872	VB	0.0482	144.25040	4.50670	linalool
4	22.740	VV	0.0523	24.59810	0.76850	menthone
5	23.137	VV	0.0530	203.04831	6.34368	iso-menthone
6	23.568	VB	0.0568	11.67702	0.36482	a-terpineol
7	24.287	VV	0.0546	1040.42615	32.50522	citronellol
8	24.657	VV	0.0481	216.87868	6.77577	citronellyl formate
9	24.966	VV	0.0515	381.57538	11.92126	geraniol
10	25.351	VV	0.0485	79.77444	2.49233	geranyl formate
11	25.822	VV	0.0632	9.77795	0.30548	6,9 guaiadiene
12	30.265	VV	0.0477	31.05162	0.97012	geranyl butyrate
13	32.042	VV	0.0578	45.90965	1.43432	phenyl ethyl tiglate
14	32.573	VV	0.0532	139.37857	4.35450	10 epi gamma eudesmol
15	33.103	VV	0.0514	44.30345	1.38414	geranyl tiglate

Totals : 2422.44408 75.6825

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*** End of Report ***

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04/07/19