

### CERTIFICATE OF ANALYSIS

<b>SAMPLE NAME</b>		Sandalwood oil Australian	
<b>FORM</b>		Oil	
<b>CUSTOMER NAME</b>		Buckley & Phillips Aromatics	
<b>CERTIFICATION DATE</b>		01 May 2019	
<b>CUSTOMER REFERENCE</b>		ref:18574	
<b>ARL JOB #</b>	A190905	<b>LAB REF. #</b>	ARL1902308
<b>ANALYSIS</b>	FULL CoA - ISO	<b>METHOD</b>	ARL-TM101-3

TEST	ISO 22769:2009** SPECIFICATION	RESULTS	TEST METHOD
Relative Density @ 20°C	0.945 - 0.980	0.957	Ph.Eur.2.2.5
Refractive Index @ 20°C	1.500 - 1.517	1.5073	Ph.Eur.2.2.6
Optical Rotation @ 20°C	-16° - +4°	+3.19°	Ph.Eur.2.2.7
Miscibility in ethanol 70%	< 5 volumes	4.0	ISO875

TEST	ISO 22769:2009** SPECIFICATION	RESULTS	TEST METHOD
	Area %		
(Z)- $\alpha$ -santalol	15.0 – 25.0	17.51	ARL-TM101-3*
epi- $\alpha$ -bisabolol	2.0 – 12.5	5.21	
(Z)- $\alpha$ -trans-bergamotol	2.0 – 10.0	4.27	
(E,E)-farnesol	2.5 – 15.0	11.75	
epi- $\beta$ -santalol	0.5 – 3.50	1.43	
(Z) $\beta$ -santalol	5.0 – 20.0	6.18	
(Z)-nuciferol	2.0 – 15.0	13.54	
(Z)-lanceol	1.0 – 10.0	2.20	

\* Assay by GC (FID detection –area percent report)

\*\* ISO 22769:2009-Oil of Australian sandalwood (Santalum spicatum)

  
 Dr Jeanette Balindong  
 ANALYTICAL OFFICER

  
 Mr Ashley Dowell  
 MANAGER - ARL



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Area Percent Report  
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Sorted By : Signal  
Calib. Data Modified : 4/29/2019 3:53:27 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	69.433	VV	0.2252	127.66294	5.21050	epi a bisabolol
2	72.804	VV	0.2468	428.90396	17.50552	cis-a-santalol
3	75.869	VV	0.2834	104.60555	4.26943	trans a bergamotol
4	79.562	VV	0.2292	287.86783	11.74919	trans trans farnesol
5	80.150	VV	0.2654	35.11099	1.43304	epi b santalol
6	82.901	VV	0.2827	151.35313	6.17741	cis b santalol
7	87.802	FM	0.3523	331.63458	13.53551	cis nuciferol
8	92.221	VV	0.2705	54.02441	2.20498	cis lanceol

Totals : 1521.16341 62.0856

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\*\*\* End of Report \*\*\*

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30/4/19