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Certificate of Analysis & Gas Chromatography Organic Sandalwood (*Santalum spicatum*)

Batch Reference: BN020617-4
Certificate Date: 10 Oct 2016
Product: HE SANTAL BIO Australie
Appearance: Clear, viscous liquid, almost colourless to yellow.

Organolepsis: The olfactory character of Australian Sandalwood oil is powerful, sweet and diffuse in the top notes. The woody, smoky and sweet heart notes complement the warm and rich balsamic base. It has a true sandalwood character throughout the whole chord, with a tenacious woody dry-down.

Physical - chemical elucidation:

Physical Parameters	Value	ISO Specification	ISO Method
Relative density at 20°C	0.957	0.945 - 0.980	ISO 279
Refractive index at 20°C	1.5062	1.5000-1.5170	ISO 280
Solubility in 70% (VN) ethanol at 20°C	3.8	max 5.0 volumes	ISO 875
Optical rotation at 20°C	3.0	-16.0 to + 4.0	ISO 592
Acid value at 20°C	2.8	max 5.0	ISO 1242

Volatiles elucidation: ISO Specification 22769

Operating parameters: Shimadzu GC2010 with an AOC-20i Autosampler; Column: Stabilwax (DB-Wax), 60m x 0.53mm x 1.00 µm; Carrier Gas: Hydrogen @ 40.0 cm/sec.; Detector: FID, 220°C; Temperature program: 50°C (5min). 3°C/min to 210°C (29min).

Parameter	% concentration	ISO specification	ISO Method
E nerolidol	1.9%	n/a	ISO 22769
dendrolasin	1.4%	n/a	ISO 22769
beta bisabolol	2.3%	n/a	ISO 22769
Z-α-santalol	15.2%	15.0%-25.0%	ISO 22769
epi-α-bisabolol	5.1%	2.0%- 12.5%	ISO 22769
z-α-(trans)-bergamotol	3.3%	2.0%- 10.0%	ISO 22769
epi- β-santalol	1.2%	0.5%-3.5%	ISO 22769
Z- β-santalol	5.4%	5.0%-20.0%	ISO 22769
Z-nuciferol	8.1%	2.0%-15.0%	ISO 22769
E, E farnesol	10.2%	2.5%-15.0%	ISO 22769
z-γ-curcumen-12-ol	6.9%	n/a	ISO 22769
z-β-curcumen-12-ol	9.0%	n/a	ISO 22769
z-lanceol	3.3%	1.0%-10.0%	ISO 22769
Terpenes	4.8%	n/a	ISO 22769

**THE ANALYZES IN WHICH THE RESULTS ARE PRESENTED ON THIS DOCUMENT
HAVE BEEN CARRIED OUT BY THE LABORATORY OF OUR SUPPLIER**