

## Certificate of Analysis

Product: Pine Oil (China)  
Botanical Name: *Pinus massoniana*  
Origin: China  
Plant part used: Needles and branches  
Extraction method: Steam Distilled

<b>Physical data</b>	<b><u>Specification<sup>2</sup></u></b>	<b><u>Result</u></b>
Appearance:	Clear, mobile liquid	Complies
Colour:	Colourless to Pale Yellow	Complies
Odour:	Characteristic pine	Complies
Specific Gravity @ 20°C:	0.9000 to 0.9450	0.9015
Refractive Index @ 20°C:	1.4700 to 1.4850	1.4767
Optical Rotation:	+10.00 <sup>0</sup> to -10.00 <sup>0</sup>	-3.24 <sup>0</sup>

### Chromatographic Profile

Component	Peak Area <sup>1,2</sup> (%)	Result (%)	Component	Peak Area <sup>1,2</sup> (%)	Result (%)
a-pinene	Trace to 5	0.79	4-Carene	2 to 15	10.50
Camphene	Trace to 5	2.26	Fenchol	Trace to 12	0.26
1,4 - Cineole	Trace to 12	10.63	Terpinene-1-ol	5 to 15	10.62
d-Limonene	Trace to 12	5.98	a-Terpineol	5 to 20	12.09
1,8 - Cineole	Trace to 12	6.96	g-Terpineol	Trace to 10	3.88
g-Terpinene	Trace to 5	1.97			