



Certificate of Analysis - Nicotine.

Batch no. N28/02/2016.
Nicotine specification: 99.93%

Analysis	Specification	RESULT
Product name/Formula/Weight	Nicotine C ₁₀ H ₁₄ N ₂ 162.2	Complies
Appearance	Colourless or tan viscous liquid	Colourless/tan liquid
Odour	Characteristic	Complies
Specific optical rotation ([α] _D ²⁰ , in ethanol)	-130° to -143°	130.5°C
Nicotine identity -U.V. (0.002% in 0.1M HCL)	Spectrum conforms to reference (Encl.1) 1 max 257 to 261 nm A (1%.1cm) 331-357	Complies
Solubility	clear and complete	Complies
Density, G/ml	1.006 - 1.012	1,01
PH	6 - 7	6.81
Nicotine identity IR	Spectrum conforms to reference (Encl.2)	Complies
Residual solvents	<0.05% (v/v) Cyclohexane	Not detected
Waters (Karl Fischer)	<0.5%	0,02%
Heavy metal	<10ppm	Complies
Arsenic	<1ppm	Complies
Assay non-aqueous titration	>99.8%	99,93%

Refined substances (HPLC)		
Cotinine	<0.25%	Complies
βNicotyrine	<0.25%	Complies
Myosmine	<0.25%	Complies
Unspecified single impurities	<0.1%	Complies
Sum total Nicotine-N-Oxides	<0.25%	0,0200%
Sum total impurities (specified and unspecified)	<0.5%	Complies

Conclusion	Conforms with specifications
Storage	Under nitrogen, in an airtight container, protected from light.

Date of manufacture: February 2016.

Date of expiry: February 2018.