



INCORPORATED

Certificate of Analysis

NICOTINE

Lot # 8727-16-02-01:04

Manufactured March 15, 2016

Parameter	Method	Acceptance Criteria (Monograph) ¹	Result
Identification	USP<197U>	UV absorption spectra of test solution and the standard solution exhibit maxima and minima at the same wavelengths.	UV absorption spectra of test solution and the standard solution exhibit maxima and minima at the same wavelengths.
Specific Rotation	USP <781S>	-130° to -143°	-138°
Heavy Metals	USP <231> Method II	NMT 0.002%	< 0.002%
Water Determination	USP <921> Method I	NMT 0.5%	0.1%
Chromatographic Purity	USP <621>	No single impurity >0.5%	Impurities: RRT 1.06: 0.1% RRT 1.08: 0.1% RRT 1.11: 0.1% RRT 1.15: 0.1% RRT 1.17: 0.1%
		Total impurities NMT 1.0%	Total Impurities ² : 0.6%
Titrimetric Assay	USP <541>	99.0 % -101.0% (Anhydrous Basis)	100.6%

Maria Clara U. Smith
Quality Control Manager

Comments: ¹Refers to USP 36-NF32s2 (Monograph is Nicotine)

²Difference between the sum of listed impurities and 'Total Impurities' is due to rounding and additional minor (0.02-0.05%) impurities

NMT = Not more than

RRT = Relative retention time with respect to Nicotine peak

Purged with Argon