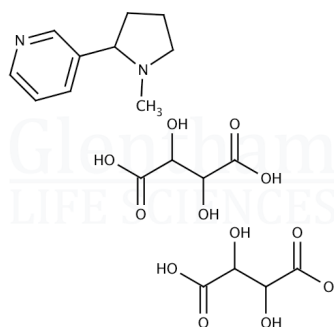


## Certificate of Analysis

Product Name	(-)-Nicotine hydrogen tartrate salt
Glentham Code	GL9693
CAS Number	65-31-6
EINECS	200-607-2
MDL Number	MFCD00069368
Additional CAS	6019-06-3 ( $\cdot 2\text{H}_2\text{O}$ )
Additional CAS	2624-48-8
Additional CAS	54-11-5 (base)
PubChem SID	295369473
Batch Number	470RKB



Molecular Weight	462.41 (anhydrous)
Molecular Formula	$\text{C}_{10}\text{H}_{14}\text{N}_2 \cdot 2\text{C}_4\text{H}_6\text{O}_6$ (anhydrous)
Storage Temp.	+4°C

Property	Specification	Batch 470RKB
Physical Description	White to almost white powder	Conforms
Solubility	10% in water: Soluble	Conforms
	1% in 96% ethanol: Slightly soluble	Conforms
Identification	IR	Conforms
pH (10% in water)	3.0 - 3.4	3.02
Specific Optical Rotation	+21.0 - +23.0 ° (1% in water)	+21.6°
Related Substances (HPLC)	Any Specified Impurity: $\leq 0.3\%$	$\leq 0.05\%$ (each)
	(Continine, Myosmine, Nicotine-N-oxide, beta-Nicotyrine, Anatabine, Anabasine, Normicotine)	
	Unspecified Impurity: $\leq 0.1\%$	0.08%
	Total Impurities: $\leq 0.8\%$	0.14%
Water	6.9 - 8.0 %	7.6%
Sulphated Ash	$\leq 0.1\%$	0.05%
Assay (HPLC)	98.5 - 101.5 % (anhydrous basis)	100.8%
Residual Solvents	Ethanol: $\leq 5000\text{ppm}$ , Methanol: $\leq 3000\text{ppm}$	Ethanol: 272ppm, Methanol: 81ppm
Pharmacopoeia Specification(s)	EP	Conforms

Specification Version	v1.1
Manufacture Date	2013-10-19
Re-Test Date	2026-09-11

Glentham Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check [www.glentham.com](http://www.glentham.com) or contact us using the details above for the current version of this document.

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