



CERTIFICATE OF ANALYSIS

Product name: Vitamin B₁ (Thiamine Hydrochloride)

Batch No.: TH19015065

Manufacturing date: Jan 24, 2019

Reporting date: Jan 27, 2019

Retest date: Jan 23, 2022

Quantity: 1,000 kg

Package: 25 kg per carton

Package size: 390 × 290 × 560 (mm)

Article No.: 07102

Irradiation / ETO treatment: No

Test Item	Specification	Method	Result
Description	White crystals or crystalline powder	Visual	White crystalline powder
Identification			
Infrared absorption	Consistent with the reference IR spectra	USP	Consistent with the reference IR spectra
Chloride	A white curdy precipitate is formed with silver nitrate, the precipitate is insoluble in nitric acid but dissolves readily in ammonia	USP	A white curdy precipitate is formed with silver nitrate, the precipitate is insoluble in nitric acid but dissolves readily in ammonia
Appearance of solution	Clear, not more intense than Y ₇ or GY ₇	EP	Clear, not more intense than Y ₇
pH	2.7 ~ 3.3	USP	3.2
Water	NMT 5.0%	USP	3.01%
Sulphates	NMT 0.03%	EP	<0.03%
Residue on ignition	NMT 0.1%	USP	0.05%
Absorbance of solution	NMT 0.025	USP	0.013
Limit of nitrate	No brown ring is produced at the junction of the two layers	USP	No brown ring is produced at the junction of the two layers
Related substances (Disregard limit: 0.05%)			
- Impurity A	NMT 0.15%	EP	Comply
- Impurity B	NMT 0.3%	EP	Comply
- Impurity C	NMT 0.15%	EP	Comply
- Unspecified impurity	NMT 0.10%	EP	Comply
- Total impurities	NMT 0.5%	EP	Comply
Related compounds	NMT 1.0%	USP	0.02%
Residual solvent			
Methanol	NMT 0.3%	GC, in-house	0.0052%
Ethanol	NMT 0.5%	GC, in-house	Not detected
Assay (on anhydrous basis)	98.0% ~ 102.0%	USP	99.1%

(TO BE CONTINUED IN NEXT PAGE)