

CERTIFICATE OF ANALYSIS

Product name: Vitamin B₁ Food Grade

Batch No.: TN20092058

Manufacturing date: Sep 19, 2020

Reporting date: Sep 21, 2020

Retest date: Sep 18, 2024

Quantity: 1,000 kg

Package: 25 kg per carton

Package size: 390 × 290 × 450 (mm)

Article No.: 06102

Irradiation / ETO treatment: No

Test Item	Specification	Method	Result
Description	White crystals or crystalline powder	Visual	White crystalline powder
Identification			
Color reaction	A brown ring forms at the junction of the two liquids	USP	A brown ring forms at the junction of the two liquids
Precipitate reaction	The color of the solution changes to brown and, on standing, a precipitate of lead sulfide forms	USP	The color of the solution changes to brown and, on standing, a precipitate of lead sulfide forms
Precipitate reaction	A white precipitate results from treatment with mercuric chloride, and a red-brown precipitate results from treatment with iodine, treatment with mercuric-potassium iodide and trinitrophenol also causes precipitates to form	USP	A white precipitate results from treatment with mercuric chloride, and a red-brown precipitate results from treatment with iodine, treatment with mercuric-potassium iodide and trinitrophenol also causes precipitates to form
Reaction of fluorescence	The air-liquid meniscus shows a vivid blue fluorescence which disappears when the mixture is slightly acidified and reappears when it is again made alkaline	USP	The air-liquid meniscus shows a vivid blue fluorescence which disappears when the mixture is slightly acidified and reappears when it is again made alkaline
Appearance of solution	Clear, not more intense than Y ₇	EP	Clear, not more intense than Y ₇
pH	6.8 ~ 7.5	EP	7.2
Loss on drying	NMT 1.0%	USP	0.10%
Residue on ignition	NMT 0.1%	USP	0.04%
Chloride	NMT 0.06%	USP	<0.06%
Related substances (Disregard limit: 0.05%)			
- Impurity A	NMT 0.15%	EP	Comply
- Impurity B	NMT 0.6%	EP	Comply
- Impurity C	NMT 0.4%	EP	Comply
- Unspecified impurity	NMT 0.10%	EP	Comply
- Total impurities	NMT 1.0%	EP	Comply
Related compounds	NMT 1.0%	USP	0.24%
Residual solvent - Methanol	NMT 0.3%	GC, in-house	0.0014%
Assay (on dry basis)	98.0% ~ 102.0%	USP	99.1%

(TO BE CONTINUED IN NEXT PAGE)

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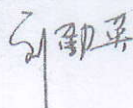
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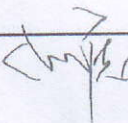
(CONTINUED)

Test Item	Specification	Method	Result
Heavy metals			
Lead	≤0.5 mg/kg	AAS, in-house	<0.5 mg/kg
Cadmium	≤0.5 mg/kg	AAS, in-house	<0.5 mg/kg
Arsenic	≤0.5 mg/kg	AAS, in-house	<0.5mg/kg
Mercury	≤0.1 mg/kg	AAS, in-house	<0.1 mg/kg
Microbials			
Total Aerobic Microbial Count	NMT 100 cfu/g	ChP	<100 cfu/g
Total Yeasts and Moulds Count	NMT 10 cfu/g	ChP	<10 cfu/g
E. Coli	Negative	ChP	Negative
Salmonella	Negative	ChP	Negative
S. Aureus	Negative	ChP	Negative
Conclusion: This batch was analyzed and found to meet the specifications as given above.			
Compendial compliance guarantee This material meets all requirements of the following valid compendia when tested accordingly: BP, EP, USP, FCC			
Remark: Preserve in a tight non-metallic container, protected from light.			

Reported by:



Approved by:



END OF CERTIFICATE