

## CERTIFICATE OF ANALYSIS

Page 1 of 4

<b>Product Name</b>	Zinc Picolinate
<b>Product Code</b>	2605
<b>Batch No.</b>	C210287
<b>TR No.</b>	KL21F0176
<b>Date of Manufacture</b>	February 2021
<b>Date of Expiry</b>	January 2026

Category	Intended for Nutraceutical application
CAS No	17949-65-4
Preparation type	Synthetic
Solvent used for extraction	DM Water
Molecular Formula	C <sub>12</sub> H <sub>8</sub> N <sub>2</sub> O <sub>4</sub> Zn
Molecular Weight	309.38
Chemical Name	Zinc bis (2-pyridine carboxylato-N1, O2)-(T-4)
Starting Material	Picolinic acid
Synonyms	Picolinic acid, zinc chelate
Excipient used	None

Parameters	Result	Limit	Reference
<b>PHYSICAL</b>			
Description	Complies	White crystalline powder	Visual
Identification	Complies	a) To comply by IR Spectrum b) To comply by HPLC	a) USP <197 K> b) SLL/STP-P-005
Solubility	Complies	Freely soluble in dilute acid (10%w/w hydrochloric acid), very slightly soluble in water	USP
Moisture content by KF method	5.72 % w/w	Not more than 8.0% w/w	USP <921>
Tapped bulk density	0.90 g/ml	Between 0.60g/ml and 1.20g/ml	EP 2.9.34 Method - I
Loose bulk density	0.63 g/ml	Between 0.35g/ml and 0.65g/ml	EP 2.9.34 Method - I

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Page 2 of 4

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Parameters	Result	Limit	Reference
Sieve Test (Passes through)			USP <786>
- 40 mesh	100.00 % w/w	Not less than 100% w/w	
- 80 mesh	97.65 % w/w	Not less than 95% w/w	
<b>CHEMICAL</b>			
Assay			
-Content of Zinc by ICP-OES	21.38 % w/w	Not less than 20.0% w/w and not more than 23.0% w/w on anhydrous basis	SLL/STP-Z-002
-Content of Picolinic acid by HPLC	79.13 % w/w	Not less than 75.0% w/w and not more than 80.0% w/w on anhydrous basis	SLL/STP-P-005
<b>OTHERS</b>			
Lead	<0.2 ppm (µg/g)	Not more than 3ppm (µg/g)	USP <2232>
Arsenic	<0.2 ppm (µg/g)	Not more than 1ppm (µg/g)	USP <2232>
Cadmium	0.23 ppm (µg/g)	Not more than 1ppm (µg/g)	USP <2232>
Mercury	<0.02 ppm (µg/g)	Not more than 0.1ppm (µg/g)	USP <2232>
Residual solvents	Not applicable	Not applicable	
<b>MICROBIOLOGICAL PROFILE</b>			
Total aerobic microbial count	<100 cfu/g	Not more than 5000cfu/g	EP 2.6.12

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Page 3 of 4

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<b>Parameters</b>	<b>Result</b>	<b>Limit</b>	<b>Reference</b>
Total yeasts and molds count	<10 cfu/g	Not more than 100cfu/g	EP 2.6.12
Escherichia coli	Complies	Negative/10g	EP 2.6.13
Salmonella	Complies	Negative/10g	EP 2.6.13
Staphylococcus aureus	Complies	Negative/10g	EP 2.6.13
Pseudomonas aeruginosa	Complies	Negative/10g	EP 2.6.13
Bile tolerant Gram negative bacteria	Complies	Negative/10g	EP 2.6.13
Coliforms	<10 cfu/g	Less than 10	

### **ADDITIONAL INFORMATION**

Sanitising treatment	Non-irradiated and not treated with ETO
Certification Status (Kosher/Halal)	Halal certified
Genetic Modification Status	GMO free
BSE/TSE status	BSE / TSE free
Country of Origin	India
Storage condition	Store at room temperature
Manufactured By	Sami-Sabinsa Group Limited - Peenya 19/1, 19/2, I Main II Phase, Peenya Industrial Area, Bangalore. 560 058, Karnataka, India
Manufactured At	Sami-Sabinsa Group Limited - Kunigal Plot No. 30-35, KIADB Industrial Area, Kunigal, Tumkur District - 572130

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Page 4 of 4

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The above certificate of analysis is based *Specifications Issue No: 3 Dated: August 09, 2018* on

***\*\*In-House developed and validated methods***

***NAP:Not Applicable***

***NAV:Not Available***