



CERTIFICATE OF ANALYSIS

Production name	L-Glutathione reduced	CAS No.	70-18-8
Batch No.	GSH-21100601	Formula	C ₁₀ H ₁₇ N ₃ O ₆ S
MFG. Date	Oct. 06, 2021	Quantity	300kg
Expiry Date	Oct. 05, 2023	Report Date	Oct. 13, 2021
Storage conditions	Keep container tightly closed in a cool, dry and well-ventilated place.		
Inspection Standard	Enterprise Standard		
Test Items	Specifications	Results	Analytical method reference
Appearance	White or almost white crystalline powder	White crystalline powder	visual
Identification IR	Conforms to the Reference Spectrum	Conforms to the Reference Spectrum	USP39
Optical rotation	-15.5° to -17.5°	-16°	USP39
Appearance of solution	Freely soluble in water, very slightly soluble in ethanol and in methylene chloride	Complied	visual
Chlorides	Not more than 200 ppm	Complied	USP39
Sulfates	Not more than 300 ppm	Complied	USP39
Ammonium	Not more than 200 ppm	Complied	USP39
Iron	Not more than 10 ppm	Complied	USP39
Arsenic	Not more than 1 ppm	Complied	USP39
Heavy metals	Not more than 10 ppm	Complied	USP39
Cadmium (Cd)	Not more than 1 ppm	Complied	USP39
Lead (Pb)	Not more than 3 ppm	Complied	USP39
Mercury (Hg)	Not more than 1 ppm	Complied	USP39
Sulfated ash	Not more than 0.1%	0.05%	USP39
Loss on drying	Not more than 0.5%	0.386%	USP39
Bulk density	Not less than 0.2g/ml	0.4614g/ml	USP39
Tapped density	Not less than 0.4g/ml	0.6926g/ml	USP39
Total plate count	≤ 1000cfu/g	Complied	USP39
Yeast and mold count	≤ 100cfu/g	Complied	USP39
Salmonella	Negative	Complied	USP39
Related Substances	Total	Maximum 2.0%	1.03%
	GSSG	Maximum 1.5%	0.42%
Assay	98.0% to 101.0%	98.47%	USP39
Conclusion: Complies with Enterprise Standard			

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