



CERTIFICATE OF ANALYSIS

Production name	L-Glutathione reduced	CAS No.	70-18-8	
Batch No.	GSH-21112402	Formula	C ₁₀ H ₁₇ N ₃ O ₆ S	
MFG. Date	Nov. 24, 2021	Quantity	500kg	
Expiry Date	Nov. 23, 2023	Report Date	Nov. 30, 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°	-15.5°	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%	0.054%	USP39	
Loss on drying	Not more than 0.5%	0.285%	USP39	
Bulk density	Not less than 0.2g/ml	0.4061g/ml	USP39	
Tapped density	Not less than 0.4g/ml	0.6310g/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%	1.50%	USP39
	GSSG	Maximum 1.5%	0.26%	USP39
Assay	98.0% to 101.0%	98.05%	USP39	
Conclusion: Complies with Enterprise Standard				

Analyst: Tangyuan

Auditor: Wangyuanyuan

Chief of QC: Zhaohonglai

Address: Room 832, Podium Building 12, Shenzhen Bay Science and Technology Ecological Park, 18 Keji South Road, High-tech Zone, Yuehai Street, Nanshan District, Shenzhen China