



Unilong Industry Co., Ltd

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CERTIFICATE OF ANALYSIS

Product Name:	1, 4, 7, 10-Tetraazacyclododecane Tetraacetic acid	Batch No.	JL20230305
Cas	60239-18-1	MF Date	Mar.05,2023
Quantity	50KG	Expiry Date	Mar.04,2024
Item	Standard	Result	
Appearance	white powder; Soluble in water, insoluble in methanol and ethanol	White powder	
Identification	IR: the infrared spectrum of the sample should correspond to that of the reference standard	Compliance	
	HPLC: the retention time of the major peak of the sample solution should correspond to that of the standard solution, as obtained in the test item of Related substances 1	Compliance	
Assay (on the anhydrous basis)	98.5%-101.5%	99.7%	
Water content	<10.0%	6.4%	
Residue in ignition	<0.1%	0.04%	
Total halogens	<200ppm	complies	
Hydrate Constituent	Not more than 0.5%	0.21%	
Total impurities	<0.5%	0.05%	
Residual solvent	Ethanol	<5000ppm	

Microbiological limits	Total aerobic microbial count (TAMC)<102cfu/g		<1 cfu/g	
	Total combined yeasts and molds count (TYMC)<102cfu /g		<1 cfu/g	
Bacterial endotoxins	<25 EU/g		complies	
Related substances	(HPLC) Related substances 1 (By HPLC)	339002P04	<0.05%	N.D
		312301	<0.05%	N.D
		Any other individual impurity	<0.05%	0.02%
Related substances	(HPLC) Related substance 2 (By HPLC)	339001M03	<0.05%	N.D
		Total impurities	<0.5%	N.D
Tetraxetan Related compound A	10%Limit: ≤0.005%			
Conclusion	Complies			

Analyst: Wen Qian

Quality Assurance Officer: Zhan Peng