

## Certificate of Analysis

Product Name: N-Methyl-2-Pyrrolidone

Specifications: Electronic Grade

CAS No.: 872-50-4

Molecular formula: C<sub>5</sub>H<sub>9</sub>NO

Batch No.: 20230610103

Packing: Galvanized drum of 200kg net weight

Analysis item	Result of test	Specification	Unite	Test Standard
Purity	99.91	≥99.90	%	Q/1423MCX002-2020
Water	0.0095	≤0.020	%	GB/T6283
Color	6	≤10	APHA	GB/T3143
Density	1.0333	1.026-1.036	g/ml	GB/T4472
PH	7.43	6.5-9.0	/	PH meter
Refractive index	1.4691	1.465-1.475	/	Spectrophotometry
Total amine	13.25	≤50	ppm	Potentiometric titration
Li	1.3	≤20	ppb	ICP-Mass
Na	3.4	≤20	ppb	ICP-Mass
Mg	2.4	≤20	ppb	ICP-Mass
Al	1.6	≤20	ppb	ICP-Mass
K	0.9	≤20	ppb	ICP-Mass
Ca	2.4	≤20	ppb	ICP-Mass
Cr	1.2	≤20	ppb	ICP-Mass
Mn	1.1	≤20	ppb	ICP-Mass
Fe	1.6	≤20	ppb	ICP-Mass
Co	0.8	≤20	ppb	ICP-Mass
Ni	0.5	≤20	ppb	ICP-Mass
Cu	1.2	≤20	ppb	ICP-Mass
Zn	1.5	≤20	ppb	ICP-Mass
Mo	0.1	≤20	ppb	ICP-Mass
Ag	0.1	≤20	ppb	ICP-Mass
Pb	0.1	≤20	ppb	ICP-Mass
Ti	0.3	≤20	ppb	ICP-Mass
Sr	0.1	≤20	ppb	ICP-Mass
Sn	0.1	≤20	ppb	ICP-Mass
Sb	0.1	≤20	ppb	ICP-Mass
Hg	0.1	≤20	ppb	ICP-Mass

Conclusion: Conform with the specification.

No additional Phenol is added in the production process

**AUTHORIZED SIGNATURE:**

Shandong Changxin Chemical  
Science-Tech Co., Ltd.

