

济南泛诺化工有限公司
Jinan Finer Chemical Co., Ltd.

Certificate of Analysis

Product	1-Methyl-2-pyrrolidinone	CAS	872-50-4
Batch No.	FN20150702B	Quantity	25MT
Manufacture date	2015-7-2	Test date	2015-7-2

Test result

Items	Specification	Results	Test method
Purity	≥99.8%	99.909%	GB/T27563-2011
Butyrolactone	≤200ppm	186ppm	GB/T27563-2011
Total diols	≤20ppm	15ppm	GB/T27563-2011
Total amines	≤50ppm	9.6ppm	GB/T27563-2011
Water	≤200ppm	80ppm	GB/T6283-2008
Color (APHA)	≤20	7	GB/T3143
Chloride	≤0.5ppm	0.25ppm	GB/T6276.2-2010
Phosphate	≤0.5ppm	0.25ppm	GB/T6276.3-2010
Sulfate	≤0.5ppm	0.25ppm	GB/T6276.4-2010
Nitrate	≤0.5ppm	0.25ppm	GB/T6276.4-2010
Boiling point	202-204℃	Complies	
Melting point	-24.4℃	Complies	
Heat capacity	0.9908Kcal/kg	Complies	
Conclusion	The production complies with the specification		

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Detection device: PE5300DV inductively coupled plasma spectrometer					
Test Method: JY/T015-1996 inductively coupled plasma atomic emission spectrometer					
Metal-ion	Test value	Unite	Metal-ion	Test value	Unite
Al	<0.1	ppm	Ba	<5	ppb
K	<0.1	ppm	Cd	<5	ppb
Na	<0.1	ppm	Co	<5	ppb
Zn	<0.1	ppm	Mn	<5	ppb
Mg	<0.1	ppm	Mo	<5	ppb
Fe	<20	ppm	Ni	<5	ppb
V	<20	ppm	P	<5	ppb
Cr	<10	ppm	Pb	<5	ppb
Cu	<10	ppm	Sr	<5	ppb
Ca	<5	ppm	Ti	<5	ppb