

**Certificate of Analysis**

**Product:** Methanol  
**Grade:** LC-MS  
**Part No.'s:** 1935-5

<b>Lot:</b>	<b>J3R106</b>
<b>Mfg. Date:</b>	<b>2019-03-27</b>
<b>Exp. Date:</b>	<b>3 years after Mfg. Date</b>

Manufactured by Duksan Pure Chemicals

**LC-MS Suitability:**

Test	Unit	Specification	Results
ESI+ mode (as Reserpine)	ppb	Max. 50	<50
ESI- mode (as 4-Nitrophenol)	ppb	Max. 50	<50
Assay (by GC)	%	Min. 99.9	99.9
Color (APHA)		Max. 10	3
Water	%	Max. 0.03	0.001
Residue After Evaporation	ppm	Max. 1	<1
Titration Acid	mEq/g	Max. 0.0003	0.001
Titration Base	mEq/g	Max. 0.0002	0.00003
Ultraviolet Spectrophotometry			
Wavelength	Unit	Maximum UV Absorbance	
220	nm	0.25	0.21
230	nm	0.15	0.09
254	nm	0.02	0.01
280	nm	0.01	0.001
Gradient Elution Test			
Test	Unit	Maximum UV Absorbance	
Largest Eluted Peak (254nm)	mAU	2	<2
Fluorescence Trace Impurities			
Test	Unit	Maximum UV Absorbance	
At 450nm Emission	ppb	0.3	<0.3
At Emission maximum for Impurities	ppb	0.5	<0.5

## Metal Impurities

Metal	Unit	Specification (Max)	Results
Aluminum (Al)	ppb	25	<1
Barium (Ba)	ppb	5	<1
Cadmium (Cd)	ppb	5	<1
Calcium (Ca)	ppb	25	<1
Chromium (Cr)	ppb	5	<1
Cobalt (Co)	ppb	5	<1
Copper (Cu)	ppb	5	<1
Iron (Fe)	ppb	5	<1
Lead (Pb)	ppb	5	<1
Magnesium (Mg)	ppb	25	<1
Manganese (Mn)	ppb	5	<1
Lithium (Li)	ppb	5	<1
Nickel (Ni)	ppb	5	<1
Potassium (K)	ppb	25	<1
Silver (Ag)	ppb	5	<1
Sodium (Na)*	ppb	50	<1
Tin (Sn)	ppb	5	<1
Zinc (Zn)	ppb	5	<1

\* May change over time

Created By:



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Technical Support