Methanol CMOS





Material No.: 9073-05 Batch No.: 0000100004 Manufactured Date: 2014/12/16 Retest Date: 2019/12/15

## Certificate of Analysis

Test	Specification	Result
Assay (CH₃OH) (by GC)	>= 99.9 %	100.0
Color (APHA)	<= 10	5
Acidity (µeq/g)	<= 0.3	0.2
Alkalinity (µeq/g)	<= 0.1	0.1
Heavy Metals (as Pb)	<= 100 ppb	< 100
Residue after Evaporation	<= 5 ppm	< 1
Water (H₂O)(by Karl Fischer titrn)	<= 0.05 %	0.01
Solubility in H <sub>2</sub> O	Passes Test	РТ
Chloride (Cl)	<= 0.2 ppm	< 0.1
Phosphate (PO4)	<= 0.3 ppm	< 0.3
Sulfate (SO4)	<= 0.5 ppm	< 0.5
Trace Impurities – Aluminum (Al)	<= 50.0 ppb	< 5.0
Trace Impurities – Arsenic (As)	<= 5.0 ppb	< 2.0
Trace Impurities – Antimony (Sb)	<= 5.0 ppb	< 1.0
Trace Impurities – Barium (Ba)	<= 20.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 10.0 ppb	< 5.0
Trace Impurities – Cadmium (Cd)	<= 20.0 ppb	< 1.0
Trace Impurities – Calcium (Ca)	<= 50.0 ppb	6.1
Trace Impurities – Chromium (Cr)	<= 20.0 ppb	< 1.0
Trace Impurities – Cobalt (Co)	<= 20.0 ppb	< 1.0
Trace Impurities – Copper (Cu)	<= 10.0 ppb	< 1.0
Trace Impurities – Gallium (Ga)	<= 50.0 ppb	< 1.0
Trace Impurities – Germanium (Ge)	<= 50.0 ppb	< 10.0
Trace Impurities – Gold (Au)	<= 20.0 ppb	< 5.0

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600 Avantor ™ Performance Materials Inc.

3477 Corporate Parkway. Suite #200. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610

Test	Specification	Result
race Impurities – Iron (Fe)	<= 50.0 ppb	1.1
race Impurities – Lead (Pb)	<= 50.0 ppb	< 10.0
race Impurities – Lithium (Li)	<= 50.0 ppb	< 1.0
race Impurities – Magnesium (Mg)	<= 50.0 ppb	7.2
race Impurities – Manganese (Mn)	<= 10.0 ppb	< 1.0
race Impurities – Molybdenum (Mo)	<= 300.0 ppb	< 5.0
race Impurities – Nickel (Ni)	<= 10.0 ppb	< 5.0
race Impurities – Potassium (K)	<= 50.0 ppb	< 10.0
race Impurities – Silicon (Si)	<= 50.0 ppb	< 10.0
race Impurities – Silver (Ag)	<= 20.0 ppb	< 1.0
race Impurities – Sodium (Na)	<= 50.0 ppb	< 5.0
race Impurities – Strontium (Sr)	<= 10.0 ppb	< 1.0
race Impurities – Tin (Sn)	<= 50.0 ppb	< 10.0
race Impurities – Titanium (Ti)	<= 20.0 ppb	< 1.0
race Impurities – Vanadium (V)	<= 300.0 ppb	< 1.0
race Impurities – Zinc (Zn)	<= 50.0 ppb	< 1.0
race Impurities – Zirconium (Zr)	<= 300.0 ppb	< 1.0
article Count - 0.5 µm and greater	<= 100 par/ml	4
article Count - 1.0 µm and greater	<= 8 par/ml	1

For Microelectronic Use

Country of Origin:	US
Packaging Site:	Paris Mfg Ctr & DC



Phillipsburg, NJ 9001:2008, 14001:2004 Paris, KY 9001:2008 Mexico City, Mexico 9001:2008 Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003 Gliwice, Poland 9001:2008, 17025:2005 Selangor, Malaysia 9001:2008 Dehradun, India, 9001:2008, 14001:2004, 13485:2003 Mumbai, India, 9001:2008, 17025:2005 Panoli, India 9001:2008

Nej M Sal

Richard M Siberski Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600 Avantor ™ Performance Materials Inc.

3477 Corporate Parkway. Suite #200. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610