

Ethylene Glycol
CMOS



Material No.: 9346-05
Batch No.: 0000028322
Manufactured Date: 2012/12/11
Retest Date: 2017/12/10

Certificate of Analysis

Test	Specification	Result
Assay (HOCH ₂ CH ₂ OH) (by GC)	>= 99.0 %	100.0
Color (APHA)	<= 10	<5
Acidity (µeq/g)	<= 0.8	0.4
Acidity (as CH ₃ COOH)(by wt)	<= 0.01 %	<0.01
Residue after Ignition	<= 0.005 %	0.002
Water (H ₂ O)(by Karl Fischer titrn)	<= 0.2 %	<0.1
Chloride (Cl)	<= 1 ppm	<1
Phosphate (PO ₄)	<= 2 ppm	< 2
Sulfate (SO ₄)	<= 2 ppm	< 2
Arsenic and Antimony (as As)	<= 0.100 ppm	< 0.100
Trace Impurities – Iron (Fe)	<= 0.2 ppm	< 0.2
Trace Impurities – Aluminum (Al)	<= 100.0 ppb	< 5.0
Trace Impurities – Barium (Ba)	<= 100.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 50.0 ppb	< 5.0
Trace Impurities – Calcium (Ca)	<= 300.0 ppb	8.5
Trace Impurities – Chromium (Cr)	<= 50.0 ppb	< 1.0
Trace Impurities – Copper (Cu)	<= 10.0 ppb	< 1.0
Trace Impurities – Gold (Au)	<= 50.0 ppb	< 5.0
Trace Impurities – Lead (Pb)	<= 200.0 ppb	< 10.0
Trace Impurities – Lithium (Li)	<= 100.0 ppb	< 1.0
Trace Impurities – Magnesium (Mg)	<= 100.0 ppb	1.7
Trace Impurities – Manganese (Mn)	<= 100.0 ppb	< 1.0
Trace Impurities – Nickel (Ni)	<= 100.0 ppb	< 5.0
Trace Impurities – Potassium (K)	<= 300.0 ppb	< 10.0

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Test	Specification	Result
Trace Impurities – Sodium (Na)	<= 300.0 ppb	6.0
Trace Impurities – Tin (Sn)	<= 100.0 ppb	< 10.0
Trace Impurities – Titanium (Ti)	<= 100.0 ppb	< 1.0
Trace Impurities – Zinc (Zn)	<= 400.0 ppb	5.2
Particle Count – 0.5 µm and greater	<= 200 par/ml	30
Particle Count – 1.0 µm and greater	<= 10 par/ml	8

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

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