

Toluene
CMOS



Material No.: 9466-03
Batch No.: 0000100660
Manufactured Date: 2014/12/19
Retest Date: 2019/12/18

Certificate of Analysis

Test	Specification	Result
Assay (C ₆ H ₅ CH ₃) (by GC)	>= 99.5 %	100.0
Color (APHA)	<= 10	5
Acidity (µeq/g)	<= 0.2	0.1
Residue after Evaporation	<= 2.0 ppm	1.5
Water (by KF, coulometric)	<= 0.03 %	0.01
Substances Darkened by H ₂ SO ₄	Passes Test	PT
Sulfur Compounds (as S)	<= 0.003 %	< 0.001
Chloride (Cl)	<= 2 ppm	< 1
Phosphate (PO ₄)	<= 0.5 ppm	< 0.5
Trace Impurities – Aluminum (Al)	<= 20.0 ppb	< 5.0
Arsenic and Antimony (as As)	<= 10 ppb	< 10
Trace Impurities – Barium (Ba)	<= 10.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities – Cadmium (Cd)	<= 20.0 ppb	< 1.0
Trace Impurities – Calcium (Ca)	<= 100.0 ppb	1.4
Trace Impurities – Chromium (Cr)	<= 10.0 ppb	< 1.0
Trace Impurities – Cobalt (Co)	<= 20.0 ppb	< 1.0
Trace Impurities – Copper (Cu)	<= 20.0 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
Heavy Metals (as Pb)	<= 500 ppb	< 500
Trace Impurities – Iron (Fe)	<= 20.0 ppb	< 1.0
Trace Impurities – Lithium (Li)	<= 20.0 ppb	< 1.0

Material No.: 9466-03
Batch No.: 0000100660

Test	Specification	Result
Trace Impurities – Magnesium (Mg)	<= 10.0 ppb	< 1.0
Trace Impurities – Manganese (Mn)	<= 10.0 ppb	< 1.0
Trace Impurities – Nickel (Ni)	<= 20.0 ppb	< 5.0
Trace Impurities – Potassium (K)	<= 50.0 ppb	< 10.0
Trace Impurities – Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities – Silver (Ag)	<= 20.0 ppb	< 1.0
Trace Impurities – Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities – Strontium (Sr)	<= 10.0 ppb	< 1.0
Trace Impurities – Tin (Sn)	<= 30.0 ppb	< 10.0
Trace Impurities – Zinc (Zn)	<= 20.0 ppb	< 1.0
Particle Count – 1.0 µm and greater	<= 10 par/ml	3

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

A handwritten signature in white ink, appearing to read 'Richard M Siberski', is written over the blue background.

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