

Toluene  
CMOS



Material No.: 9466-03  
Batch No.: 0000203710  
Manufactured Date: 2018/05/07  
Retest Date: 2023/05/06  
Revision No: 1

## Certificate of Analysis

Test	Specification	Result
Assay (C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> ) (by GC)	>= 99.5 %	99.9
Color (APHA)	<= 10	5
Acidity (µeq/g)	<= 0.2	< 0.1
Residue after Evaporation	<= 2.0 ppm	< 1.0
Water (by KF, coulometric)	<= 0.03 %	0.02
Substances Darkened by H <sub>2</sub> SO <sub>4</sub>	Passes Test	PT
Sulfur Compounds (as S)	<= 0.003 %	< 0.001
Chloride (Cl)	<= 2 ppm	< 2
Phosphate (PO <sub>4</sub> )	<= 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	1.9
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

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

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

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	1.1
Particle Count – 1.0 µm and greater	<= 10 par/ml	1

For Microelectronic Use

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



Phillipsburg, NJ 9001:2015, FSSC 22000  
 Paris, KY 9001:2008  
 Mexico City, Mexico 9001:2008  
 Gliwice, Poland 9001:2008  
 Selangor, Malaysia 9001:2008  
 Dehradun, India, 9001:2008, 14001:2004, 13485:2003  
 Mumbai, India, 9001:2015, 17025:2005  
 Panoli, India 9001:2015



Jamie Ethier  
 Vice President Global Quality

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