

Toluene
CMOS



Material No.: 9466-03
Batch No.: 22C0961074
Manufactured Date: 2022-03-03
Retest Date: 2027-03-02
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (C ₆ H ₅ CH ₃) (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 ppm
Water (by KF, coulometric)	≤ 0.03 %	0.01 %
Substances Darkened by H ₂ SO ₄	Passes Test	Passes Test
Sulfur Compounds (as S)	≤ 0.003 %	< 0.001 %
Chloride (Cl)	≤ 2 ppm	< 2 ppm
Phosphate (PO ₄)	≤ 0.5 ppm	< 0.5 ppm
Trace Impurities - Aluminum (Al)	≤ 20 ppb	< 5 ppb
Arsenic and Antimony (as As)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Barium (Ba)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Boron (B)	≤ 20.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Calcium (Ca)	≤ 100.0 ppb	3.5 ppb
Trace Impurities - Chromium (Cr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Cobalt (Co)	≤ 20 ppb	< 1 ppb
Trace Impurities - Copper (Cu)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Gallium (Ga)	≤ 50 ppb	< 1 ppb
Trace Impurities - Germanium (Ge)	≤ 50.0 ppb	< 10.0 ppb
Trace Impurities - Gold (Au)	≤ 20 ppb	< 5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 500.0 ppb
Trace Impurities - Iron (Fe)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Lithium (Li)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Magnesium (Mg)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Nickel (Ni)	≤ 20.0 ppb	< 5.0 ppb
Trace Impurities - Potassium (K)	≤ 50 ppb	< 10 ppb

>>> Continued on page 2 >>>

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
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Test	Specification	Result
Trace Impurities - Silicon (Si)	≤ 100.0 ppb	< 10.0 ppb
Trace Impurities - Silver (Ag)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 100.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Tin (Sn)	≤ 30.0 ppb	< 10.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	< 1.0 ppb
Particle Count - 1.0 µm and greater	≤ 10 par/ml	1 par/ml

For Microelectronic Use
Country of Origin: USA
Packaging Site: Paris Mfg Ctr & DC


Jamie Ethier
Vice President Global Quality

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