

Toluene
CMOS



Material No.: 9466-03

Batch No.: 24I1961012

Manufactured Date: 2024-09-17

Retest Date: 2029-09-16

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	0.3 ppm
Water (by KF, coulometric)	<= 0.03 %	0.03 %
Substances Darkened by H ₂ SO ₄	Passes Test	Passes Test
Sulfur Compounds (as S)	<= 0.003 %	<0.003 %
Chloride (Cl)	<= 2 ppm	<2 ppm
Phosphate (PO ₄)	<= 0.5 ppm	<0.5 ppm
Trace Impurities – Aluminum (Al)	<= 20 ppb	<5 ppb
Arsenic & Antimony (as As)	<= 10.0 ppb	<10.0 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	6.6 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	1.8 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

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	0 par/ml

For Microelectronic Use

Country of Origin: United States

Packaging Site: Paris Mfg Ctr & DC


Michelle Bales
Sr. Manager, Quality Assurance

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