

Certificate of Analysis

Test	Specification	Result
Assay (CH ₃ OH) (by GC)	>= 99.9 %	100.0
Color (APHA)	<= 10	< 5
Acidity (µeq/g)	<= 0.3	0.2
Alkalinity (µeq/g)	<= 0.1	< 0.1
Heavy Metals (as Pb)	<= 100 ppb	< 50
Residue after Evaporation	<= 5 ppm	< 1
Water (H ₂ O)(by Karl Fischer titrn)	<= 0.05 %	0.01
Solubility in H ₂ O	Passes Test	PT
Chloride (Cl)	<= 0.2 ppm	< 0.2
Phosphate (PO ₄)	<= 0.3 ppm	< 0.3
Sulfate (SO ₄)	<= 0.5 ppm	< 0.5
Trace Impurities – Aluminum (Al)	<= 50.0 ppb	< 5.0
Trace Impurities – Arsenic (As)	<= 5.0 ppb	< 2.0
Trace Impurities – Antimony (Sb)	<= 5.0 ppb	< 1.0
Trace Impurities – Barium (Ba)	<= 20.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 10.0 ppb	< 5.0
Trace Impurities – Cadmium (Cd)	<= 20.0 ppb	< 1.0
Trace Impurities – Calcium (Ca)	<= 50.0 ppb	7.9
Trace Impurities – Chromium (Cr)	<= 20.0 ppb	< 1.0
Trace Impurities – Cobalt (Co)	<= 20.0 ppb	< 1.0
Trace Impurities – Copper (Cu)	<= 10.0 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

Test	Specification	Result
Trace Impurities – Iron (Fe)	<= 50.0 ppb	4.9
Trace Impurities – Lead (Pb)	<= 50.0 ppb	< 10.0
Trace Impurities – Lithium (Li)	<= 50.0 ppb	< 1.0
Trace Impurities – Magnesium (Mg)	<= 50.0 ppb	2.6
Trace Impurities – Manganese (Mn)	<= 10.0 ppb	< 1.0
Trace Impurities – Molybdenum (Mo)	<= 300.0 ppb	< 5.0
Trace Impurities – Nickel (Ni)	<= 10.0 ppb	< 5.0
Trace Impurities – Potassium (K)	<= 50.0 ppb	< 10.0
Trace Impurities – Silicon (Si)	<= 50.0 ppb	< 10.0
Trace Impurities – Silver (Ag)	<= 20.0 ppb	< 10.0
Trace Impurities – Sodium (Na)	<= 50.0 ppb	23.3
Trace Impurities – Strontium (Sr)	<= 10.0 ppb	< 1.0
Trace Impurities – Tin (Sn)	<= 50.0 ppb	< 10.0
Trace Impurities – Titanium (Ti)	<= 20.0 ppb	< 1.0
Trace Impurities – Vanadium (V)	<= 300.0 ppb	< 1.0
Trace Impurities – Zinc (Zn)	<= 50.0 ppb	38.0
Trace Impurities – Zirconium (Zr)	<= 300.0 ppb	< 1.0
Particle Count – 0.5 µm and greater	<= 100 par/ml	7
Particle Count – 1.0 µm and greater	<= 8 par/ml	4

For Microelectronic Use

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



Jamie Ethier
Vice President Global Quality