

Material No.: 2204-01 Batch No.: 0000206778

Manufactured Date: 2018/08/02 Expiration Date: 2020/01/31

Revision No: 1

Certificate of Analysis

Test	Specification	Result
Assay (H ₂ O ₂)	30.0 – 32.0 %	31.7
Color (APHA)	<= 10	5
Free Acid (µeq/g)	<= 0.2	< 0.2
Residue after Evaporation	<= 15 ppm	2
Ammonium (NH ₄)	<= 3 ppm	< 3
Chloride (Cl)	<= 2 ppm	< 2
Nitrate (NO ₃)	<= 2 ppm	< 2
Phosphate (PO ₄)	<= 2 ppm	< 2
ACS - Sulfate (SO ₄)	<= 5 ppm	< 5
Trace Impurities - Aluminum (Al)	<= 200.0 ppb	23.6
Trace Impurities – Antimony (Sb)	<= 10.0 ppb	< 1.0
Trace Impurities – Arsenic (As)	<= 10.0 ppb	< 2.0
Arsenic and Antimony (as As)	<= 10 ppb	< 10
Trace Impurities – Barium (Ba)	<= 20.0 ppb	< 1.0
Trace Impurities – Beryllium (Be)	<= 10.0 ppb	< 1.0
Trace Impurities – Bismuth (Bi)	<= 20.0 ppb	< 10.0
Trace Impurities – Boron (B)	<= 10.0 ppb	< 1.0
Trace Impurities - Cadmium (Cd)	<= 10.0 ppb	< 1.0
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	< 1.0
Trace Impurities - Chromium (Cr)	<= 20.0 ppb	2.5
Trace Impurities - Cobalt (Co)	<= 10.0 ppb	< 1.0
Trace Impurities - Copper (Cu)	<= 10.0 ppb	< 1.0
Trace Impurities - Gallium (Ga)	<= 20.0 ppb	< 1.0
Trace Impurities - Germanium (Ge)	<= 10.0 ppb	< 10.0

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Trace Impurities – Gold (Au)	<= 10.0 ppb	< 5.0
Heavy Metals (as Pb)	<= 500 ppb	< 250
Trace Impurities – Iron (Fe)	<= 50.0 ppb	4.7
Trace Impurities – Lead (Pb)	<= 10.0 ppb	< 10.0
Trace Impurities – Lithium (Li)	<= 10.0 ppb	< 1.0
Trace Impurities – Magnesium (Mg)	<= 10.0 ppb	< 1.0
Trace Impurities – Manganese (Mn)	<= 10.0 ppb	< 1.0
Trace Impurities – Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities – Nickel (Ni)	<= 10.0 ppb	< 5.0
Trace Impurities – Niobium (Nb)	<= 10.0 ppb	< 1.0
Frace Impurities – Potassium (K)	<= 600.0 ppb	181.3
Frace Impurities – Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities – Silver (Ag)	<= 10.0 ppb	< 1.0
Trace Impurities – Sodium (Na)	<= 500.0 ppb	< 5.8
Frace Impurities – Strontium (Sr)	<= 10.0 ppb	< 1.0
Frace Impurities – Tantalum (Ta)	<= 10.0 ppb	< 5.0
Frace Impurities – Thallium (Tl)	<= 50.0 ppb	< 5.0
Frace Impurities – Tin (Sn)	<= 1000.0 ppb	285.5
race Impurities – Titanium (Ti)	<= 10.0 ppb	< 1.0
Frace Impurities – Vanadium (V)	<= 10.0 ppb	< 1.0
race Impurities – Zinc (Zn)	<= 50.0 ppb	< 1.0
Frace Impurities – Zirconium (Zr)	<= 10.0 ppb	< 1.0

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 9001:2015, 14001:2015, 13485:2016
Mumbai, India 9001:2015
Panoli, India 9001:2015

