

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 % | 0.02 % |
| 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 | < 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 | 8.2 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 | 1.7 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 |

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Toluene
CMOS



Material No.: 9466-03
Batch No.: 2212861064

| 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 | 2.4 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

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

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