

Toluene
CMOS



Material No.: 9466-03
Batch No.: 0000034422
Manufactured Date: 2013/01/29
Retest Date: 2018/01/28

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 |
| Water (by KF, coulometric) | <= 0.03 % | <0.01 |
| Substances Darkened by H ₂ SO ₄ | Passes Test | PT |
| Sulfur Compounds (as S) | <= 0.003 % | <0.001 |
| Chloride (Cl) | <= 2 ppm | < 2 |
| Phosphate (PO ₄) | <= 0.5 ppm | < 0.5 |
| Trace Impurities – Aluminum (Al) | <= 20.0 ppb | < 5.0 |
| Arsenic and Antimony (as As) | <= 10 ppb | < 10 |
| Trace Impurities – Barium (Ba) | <= 10.0 ppb | < 1.0 |
| Trace Impurities – Boron (B) | <= 20.0 ppb | < 5.0 |
| Trace Impurities – Cadmium (Cd) | <= 20.0 ppb | < 1.0 |
| Trace Impurities – Calcium (Ca) | <= 100.0 ppb | 1.8 |
| Trace Impurities – Chromium (Cr) | <= 10.0 ppb | < 1.0 |
| Trace Impurities – Cobalt (Co) | <= 20.0 ppb | < 1.0 |
| Trace Impurities – Copper (Cu) | <= 20.0 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 |
| Heavy Metals (as Pb) | <= 500 ppb | 500 |
| Trace Impurities – Iron (Fe) | <= 20.0 ppb | < 1.0 |
| Trace Impurities – Lithium (Li) | <= 20.0 ppb | < 1.0 |

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| Trace Impurities – Magnesium (Mg) | <= 10.0 ppb | < 1.0 |
| Trace Impurities – Manganese (Mn) | <= 10.0 ppb | < 1.0 |
| Trace Impurities – Nickel (Ni) | <= 20.0 ppb | < 5.0 |
| Trace Impurities – Potassium (K) | <= 50.0 ppb | < 10.0 |
| Trace Impurities – Silicon (Si) | <= 100.0 ppb | < 10.0 |
| Trace Impurities – Silver (Ag) | <= 20.0 ppb | < 1.0 |
| Trace Impurities – Sodium (Na) | <= 100.0 ppb | < 5.0 |
| Trace Impurities – Strontium (Sr) | <= 10.0 ppb | < 1.0 |
| Trace Impurities – Tin (Sn) | <= 30.0 ppb | < 10.0 |
| Trace Impurities – Zinc (Zn) | <= 20.0 ppb | < 1.0 |
| Particle Count – 1.0 µm and greater | <= 10 par/ml | <1 |

For Microelectronic Use

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



Phillipsburg, NJ 9001:2008, 14001:2004
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003
Gliwice, Poland 9001:2008, 17025:2005
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2008, 17025:2005
Panoli, India 9001:2008

A handwritten signature in white ink, appearing to read 'Richard M Siberski', is written over the blue background.

Richard M Siberski
Global Director of Quality Assurance

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600
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