

Toluene  
CMOS



Material No.: 9466-03  
Batch No.: 0000076059  
Manufactured Date: 2014/04/10  
Retest Date: 2019/04/09

## Certificate of Analysis



| Test   | Specification | Result  |
|--|---------------|---------|
| Assay (C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> ) (by GC) | >= 99.5 %     | 100.0   |
| 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 <sub>2</sub> SO <sub>4</sub>          | Passes Test   | PT      |
| Sulfur Compounds (as S)  | <= 0.003 %    | < 0.001 |
| Chloride (Cl)  | <= 2 ppm      | < 2     |
| Phosphate (PO <sub>4</sub> )                                   | <= 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   | < 3.0   |
| Trace Impurities – Cadmium (Cd)                                | <= 20.0 ppb   | < 1.0   |
| Trace Impurities – Calcium (Ca)                                | <= 100.0 ppb  | 1.5     |
| 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                      | <br>Richard M Siberski<br>Vice President Global Quality |
|  | 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                                     |  |

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