

Ethylene Glycol  
CMOS



Material No.: 9346-05  
Batch No.: 0000159106  
Manufactured Date: 2016/11/05  
Retest Date: 2021/11/04

## Certificate of Analysis

| Test   | Specification | Result  |
|--|---------------|---------|
| Assay (HOCH <sub>2</sub> CH <sub>2</sub> OH) (by GC) | >= 99.0 %     | 99.9    |
| Color (APHA)   | <= 10         | 5       |
| Acidity (µeq/g)                                      | <= 0.8        | 0.6     |
| Acidity (as CH <sub>3</sub> COOH)(by wt)             | <= 0.01 %     | < 0.01  |
| Residue after Ignition                               | <= 0.005 %    | 0.003   |
| Water (H <sub>2</sub> O)(by Karl Fischer titrn)      | <= 0.2 %      | < 0.1   |
| Chloride (Cl)  | <= 1 ppm      | < 1     |
| Phosphate (PO <sub>4</sub> )                         | <= 2 ppm      | < 2     |
| Sulfate (SO <sub>4</sub> )                           | <= 2 ppm      | < 2     |
| Arsenic and Antimony (as As)                         | <= 0.100 ppm  | < 0.100 |
| Trace Impurities – Iron (Fe)                         | <= 0.2 ppm    | < 0.1   |
| Trace Impurities – Aluminum (Al)                     | <= 100.0 ppb  | < 5.0   |
| Trace Impurities – Barium (Ba)                       | <= 100.0 ppb  | < 1.0   |
| Trace Impurities – Boron (B)                         | <= 50.0 ppb   | < 5.0   |
| Trace Impurities – Calcium (Ca)                      | <= 300.0 ppb  | 10.0    |
| Trace Impurities – Chromium (Cr)                     | <= 50.0 ppb   | < 1.0   |
| Trace Impurities – Copper (Cu)                       | <= 10.0 ppb   | < 1.0   |
| Trace Impurities – Gold (Au)                         | <= 50.0 ppb   | < 5.0   |
| Trace Impurities – Lead (Pb)                         | <= 200.0 ppb  | < 10.0  |
| Trace Impurities – Lithium (Li)                      | <= 100.0 ppb  | < 1.0   |
| Trace Impurities – Magnesium (Mg)                    | <= 100.0 ppb  | 1.4     |
| Trace Impurities – Manganese (Mn)                    | <= 100.0 ppb  | < 1.0   |
| Trace Impurities – Nickel (Ni)                       | <= 100.0 ppb  | < 5.0   |
| Trace Impurities – Potassium (K)                     | <= 300.0 ppb  | < 10.0  |

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| Test                                | Specification | Result |
|-------------------------------------|---------------|--------|
| Trace Impurities – Sodium (Na)      | <= 300.0 ppb  | 5.0    |
| Trace Impurities – Tin (Sn)         | <= 100.0 ppb  | < 10.0 |
| Trace Impurities – Titanium (Ti)    | <= 100.0 ppb  | < 1.0  |
| Trace Impurities – Zinc (Zn)        | <= 400.0 ppb  | 88.0   |
| Particle Count – 0.5 µm and greater | <= 200 par/ml | 10     |
| Particle Count – 1.0 µm and greater | <= 10 par/ml  | 3      |

For Microelectronic Use

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



Phillipsburg, NJ 9001:2008, 14001:2004, FSSC 22000  
Paris, KY 9001:2008  
Mexico City, Mexico 9001:2008  
Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003  
Gliwice, Poland 9001:2008, 13485:2012  
Selangor, Malaysia 9001:2008  
Dehradun, India, 9001:2008, 14001:2004, 13485:2003  
Mumbai, India, 9001:2008  
Panoli, India 9001:2008

  
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