



Material No.: 9073-05  
Batch No.: 0000175286  
Manufactured Date: 2017/06/01  
Retest Date: 2022/05/31

## Certificate of Analysis

| Test  | Specification | Result |
|---|---------------|--------|
| Assay (CH <sub>3</sub> OH) (by GC)              | >= 99.9 %     | 100.0  |
| Color (APHA)                                    | <= 10         | 5      |
| Acidity (µeq/g)                                 | <= 0.3        | 0.3    |
| Alkalinity (µeq/g)                              | <= 0.1        | 0.1    |
| Heavy Metals (as Pb)                            | <= 100 ppb    | < 50   |
| Residue after Evaporation                       | <= 5 ppm      | < 1    |
| Water (H <sub>2</sub> O)(by Karl Fischer titrn) | <= 0.05 %     | 0.01   |
| Solubility in H <sub>2</sub> O                  | Passes Test   | PT     |
| Chloride (Cl)                                   | <= 0.2 ppm    | 0.1    |
| Phosphate (PO <sub>4</sub> )                    | <= 0.3 ppm    | < 0.3  |
| Sulfate (SO <sub>4</sub> )                      | <= 0.5 ppm    | < 0.5  |
| Trace Impurities – Aluminum (Al)                | <= 50.0 ppb   | < 5.0  |
| Trace Impurities – Arsenic (As)                 | <= 5.0 ppb    | < 2.0  |
| Trace Impurities – Antimony (Sb)                | <= 5.0 ppb    | < 1.0  |
| Trace Impurities – Barium (Ba)                  | <= 20.0 ppb   | < 1.0  |
| Trace Impurities – Boron (B)                    | <= 10.0 ppb   | < 5.0  |
| Trace Impurities – Cadmium (Cd)                 | <= 20.0 ppb   | < 1.0  |
| Trace Impurities – Calcium (Ca)                 | <= 50.0 ppb   | 1.4    |
| Trace Impurities – Chromium (Cr)                | <= 20.0 ppb   | < 1.0  |
| Trace Impurities – Cobalt (Co)                  | <= 20.0 ppb   | < 1.0  |
| Trace Impurities – Copper (Cu)                  | <= 10.0 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  |

| Test                                | Specification | Result |
|-------------------------------------|---------------|--------|
| Trace Impurities – Iron (Fe)        | <= 50.0 ppb   | 4.5    |
| Trace Impurities – Lead (Pb)        | <= 50.0 ppb   | < 10.0 |
| Trace Impurities – Lithium (Li)     | <= 50.0 ppb   | < 1.0  |
| Trace Impurities – Magnesium (Mg)   | <= 50.0 ppb   | < 1.0  |
| Trace Impurities – Manganese (Mn)   | <= 10.0 ppb   | < 1.0  |
| Trace Impurities – Molybdenum (Mo)  | <= 300.0 ppb  | < 5.0  |
| Trace Impurities – Nickel (Ni)      | <= 10.0 ppb   | < 5.0  |
| Trace Impurities – Potassium (K)    | <= 50.0 ppb   | < 10.0 |
| Trace Impurities – Silicon (Si)     | <= 50.0 ppb   | < 10.0 |
| Trace Impurities – Silver (Ag)      | <= 20.0 ppb   | < 1.0  |
| Trace Impurities – Sodium (Na)      | <= 50.0 ppb   | < 5.0  |
| Trace Impurities – Strontium (Sr)   | <= 10.0 ppb   | < 1.0  |
| Trace Impurities – Tin (Sn)         | <= 50.0 ppb   | < 10.0 |
| Trace Impurities – Titanium (Ti)    | <= 20.0 ppb   | < 1.0  |
| Trace Impurities – Vanadium (V)     | <= 300.0 ppb  | < 1.0  |
| Trace Impurities – Zinc (Zn)        | <= 50.0 ppb   | < 1.0  |
| Trace Impurities – Zirconium (Zr)   | <= 300.0 ppb  | < 1.0  |
| Particle Count – 0.5 µm and greater | <= 100 par/ml | 1      |
| Particle Count – 1.0 µm and greater | <= 8 par/ml   | < 1    |

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  
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Jamie Ethier  
 Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600  
Avantor Performance Materials, LLC.

3477 Corporate Parkway. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610