

Material No.: 9466-03  
Batch No.: 24F2661039  
Manufactured Date: 2024-06-25  
Retest Date: 2029-06-24  
Revision No.: 0

## Certificate of Analysis

| Test                                                           | Specification | Result      |
|----------------------------------------------------------------|---------------|-------------|
| Assay (C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> ) (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 <sub>2</sub> SO <sub>4</sub>          | Passes Test   | Passes Test |
| Sulfur Compounds (as S)                                        | ≤ 0.003 %     | < 0.001 %   |
| Chloride (Cl)                                                  | ≤ 2 ppm       | < 2 ppm     |
| Phosphate (PO <sub>4</sub> )                                   | ≤ 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   | 3.1 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    | < 1.0 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



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| Test                                            | Specification    | Result       |
|-------------------------------------------------|------------------|--------------|
| Trace Impurities – Silicon (Si)                 | $\leq 100.0$ ppb | $< 10.0$ ppb |
| Trace Impurities – Silver (Ag)                  | $\leq 20.0$ ppb  | $< 1.0$ ppb  |
| Trace Impurities – Sodium (Na)                  | $\leq 100.0$ ppb | $< 5.0$ ppb  |
| Trace Impurities – Strontium (Sr)               | $\leq 10.0$ ppb  | $< 1.0$ ppb  |
| Trace Impurities – Tin (Sn)                     | $\leq 30.0$ ppb  | $< 10.0$ ppb |
| Trace Impurities – Zinc (Zn)                    | $\leq 20.0$ ppb  | $< 1.0$ ppb  |
| Particle Count – $1.0\ \mu\text{m}$ and greater | $\leq 10$ par/ml | 6 par/ml     |

For Microelectronic Use

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