Hydrochloric Acid, 36.5 – 38.0% BAKER ANALYZED® A.C.S. Reagent





Material No.: 9551-80 Batch No.: 0000141784 Manufactured Date: 2016/04/27 Retest Date: 2021/04/26

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

| Test | Specification | Result |
|-------------------------------------|---------------|---------|
| Appearance | Passes Test | РТ |
| Assay (as HCI) (by acid-base titrn) | 36.5 - 38.0 % | 36.9 |
| Color (APHA) | <= 10 | 2 |
| Extractable Organic Substances | <= 5 ppm | < 1 |
| Free Chlorine (as Cl2) | <= 1 ppm | < 1 |
| Residue after Ignition | <= 3 ppm | < 1 |
| Specific Gravity at 60°/60°F | 1.185 – 1.192 | 1.186 |
| Bromide (Br) | <= 0.005 % | < 0.001 |
| Phosphate (PO4) | <= 1 ppm | < 1 |
| Sulfate (SO4) | <= 0.5 ppm | < 0.1 |
| Sulfite (SO₃) | <= 0.8 ppm | < 0.1 |
| Ammonium (NH4) | <= 3 ppm | < 1 |
| Trace Impurities – Aluminum (Al) | <= 100.0 ppb | 12.5 |
| Arsenic and Antimony (as As) | <= 5 ppb | < 1 |
| Trace Impurities – Boron (B) | <= 50.0 ppb | < 5.0 |
| Trace Impurities – Calcium (Ca) | <= 200.0 ppb | 99.7 |
| Trace Impurities – Chromium (Cr) | <= 100.0 ppb | < 10.0 |
| Trace Impurities – Copper (Cu) | <= 100.0 ppb | < 10.0 |
| Trace Impurities – Gold (Au) | <= 100.0 ppb | < 10.0 |
| Heavy Metals (as Pb) | <= 100 ppb | <5 |
| Trace Impurities – Iron (Fe) | <= 100.0 ppb | < 10.0 |
| Trace Impurities – Lead (Pb) | <= 50.0 ppb | < 5.0 |
| Trace Impurities – Magnesium (Mg) | <= 300.0 ppb | < 30.0 |
| Trace Impurities – Manganese (Mn) | <= 300.0 ppb | < 30.0 |

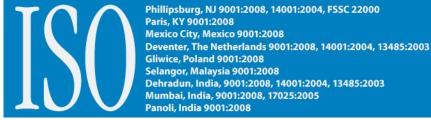
For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600 Avantor ™ Performance Materials Inc.

3477 Corporate Parkway. Suite #200. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610

| Test | Specification | Result |
|----------------------------------|---------------|--------|
| Trace Impurities – Mercury (Hg) | <= 5.0 ppb | < 0.5 |
| Trace Impurities – Nickel (Ni) | <= 100.0 ppb | < 10.0 |
| Trace Impurities – Potassium (K) | <= 300.0 ppb | < 30.0 |
| Trace Impurities – Sodium (Na) | <= 300.0 ppb | 149.1 |
| Trace Impurities - Tin (Sn) | <= 300.0 ppb | < 30.0 |
| Trace Impurities – Titanium (Ti) | <= 300.0 ppb | < 30.0 |
| Trace Impurities - Zinc (Zn) | <= 100.0 ppb | < 10.0 |

For Laboratory, Research or Manufacturing Use Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: TW



James Techie

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 Inc.

3477 Corporate Parkway. Suite #200. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610