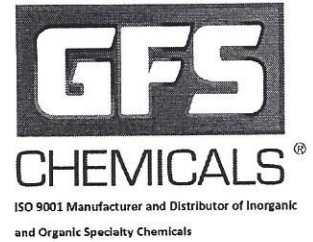


# Certificate of Analysis



**Product Name:** HYDROCHLORIC ACID, 32-38%,  
VERITAS REDISTILLED  
**Item #:** 2180  
**Lot #:** 20070054

## Certified Values:

| Specifications (Max Limits or as Specified) | Pass/Fail | Numerical Results |
|---|-----------|-------------------|
| Assay 32.0 - 38.0 %                         | Pass      | 37.6              |
| Residue after ignition 0.0001 % Max         | Pass      | < 0.0001          |
| Sulfate 0.00001 % Max                       | Pass      | < 0.00001         |
| Sulfite 0.00001 % Max                       | Pass      | < 0.00001         |
| Ammonium 0.00002 % Max                      | Pass      | < 0.00002         |
| Arsenic 0.0000001 % Max                     | Pass      | < 0.0000001       |
| Boron 0.0000002 % Max                       | Pass      | < 0.0000002       |
| Silicon 0.000001 % Max                      | Pass      | < 0.000001        |
| Ag 5.0 ppb Max                              | Pass      | < 0.1             |
| Al 1.0 ppb Max                              | Pass      | < 0.2             |
| Au 1.0 ppb Max                              | Pass      | < 0.1             |
| Ba 1.0 ppb Max                              | Pass      | < 0.1             |
| Be 1.0 ppb Max                              | Pass      | < 0.1             |
| Bi 1.0 ppb Max                              | Pass      | < 0.1             |
| Ca 10.0 ppb Max                             | Pass      | < 1.0             |
| Cd 1.0 ppb Max                              | Pass      | < 0.1             |
| Ce 1.0 ppb Max                              | Pass      | < 0.1             |

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1-800-858-9682 (U.S. and Canada) 1-740-881-5501 (International) 1-740-881-5989 (Fax)

|                |      |       |
|----------------|------|-------|
| Co 1.0 ppb Max | Pass | < 0.1 |
| Cr 1.0 ppb Max | Pass | < 0.1 |
| Cs 1.0 ppb Max | Pass | < 0.1 |
| Cu 1.0 ppb Max | Pass | < 0.1 |
| Dy 1.0 ppb Max | Pass | < 0.1 |
| Er 1.0 ppb Max | Pass | < 0.1 |
| Eu 1.0 ppb Max | Pass | < 0.1 |
| Fe 5.0 ppb Max | Pass | < 0.6 |
| Ga 1.0 ppb Max | Pass | < 0.1 |
| Gd 1.0 ppb Max | Pass | < 0.1 |
| Ge 1.0 ppb Max | Pass | < 1.0 |
| Hf 1.0 ppb Max | Pass | < 0.1 |
| Hg 1.0 ppb Max | Pass | < 0.1 |
| Ho 1.0 ppb Max | Pass | < 0.1 |
| In 1.0 ppb Max | Pass | < 0.1 |
| Ir 1.0 ppb Max | Pass | < 0.1 |
| K 5.0 ppb Max  | Pass | 0.1   |
| La 1.0 ppb Max | Pass | < 0.1 |
| Li 2.0 ppb Max | Pass | < 0.1 |
| Lu 1.0 ppb Max | Pass | < 0.1 |
| Mg 2.0 ppb Max | Pass | 0.1   |
| Mn 1.0 ppb Max | Pass | < 0.1 |
| Mo 1.0 ppb Max | Pass | < 0.1 |

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|                |      |       |
|----------------|------|-------|
| Na 5.0 ppb Max | Pass | 0.5   |
| Nb 1.0 ppb Max | Pass | < 0.1 |
| Ni 1.0 ppb Max | Pass | < 0.1 |
| Os 1.0 ppb Max | Pass | < 0.1 |
| Pb 3.0 ppb Max | Pass | < 0.1 |
| Pd 1.0 ppb Max | Pass | < 0.1 |
| Pr 1.0 ppb Max | Pass | < 0.1 |
| Pt 1.0 ppb Max | Pass | < 0.1 |
| Rb 1.0 ppb Max | Pass | < 0.1 |
| Rh 1.0 ppb Max | Pass | < 0.1 |
| Ru 1.0 ppb Max | Pass | < 0.1 |
| Sb 1.0 ppb Max | Pass | < 0.1 |
| Sc 1.0 ppb Max | Pass | < 0.1 |
| Se 1.0 ppb Max | Pass | < 0.1 |
| Sm 1.0 ppb Max | Pass | < 0.1 |
| Sn 1.0 ppb Max | Pass | < 0.1 |
| Sr 1.0 ppb Max | Pass | < 0.1 |
| Tb 1.0 ppb Max | Pass | < 0.1 |
| Te 1.0 ppb Max | Pass | < 0.1 |
| Th 1.0 ppb Max | Pass | < 0.1 |
| Ti 1.0 ppb Max | Pass | < 0.1 |
| U 1.0 ppb Max  | Pass | < 0.1 |
| V 1.0 ppb Max  | Pass | < 0.1 |

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|                |      |       |
|----------------|------|-------|
| W 1.0 ppb Max  | Pass | < 0.1 |
| Y 1.0 ppb Max  | Pass | < 0.1 |
| Yb 1.0 ppb Max | Pass | < 0.1 |
| Zn 2.0 ppb Max | Pass | 0.1   |
| Zr 1.0 ppb Max | Pass | < 0.1 |

**Comments**

**CoA #:** COA-053368  
**Certificate Create By:** Karen Hirsch  
**CoA Creation Date:** March 2, 2020  
**Best by:** February 3, 2025  
**Print Date:** May 7, 2020

**Signature on File**

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**ISO 17025 Testing**

All ISO 17025 testing is performed at GFS Chemicals, Inc. 800 Kaderly Dr, Columbus, OH 43228 USA

UV/Vis Spectrophotometer testing is performed according to ASTM method E169-16.

Turbidity testing is performed according to ASTM methods D6855-17 and ASTM D7315-17.

Conductivity testing is performed according to ASTM method D1125-14.

pH testing is performed according to ASTM method D1293-18.

Karl Fischer titration testing is performed according to ASTM methods E203-16 and E1064-16.

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