

# Certificate of Analysis

**Product Name:** HYDROCHLORIC ACID, 32-38%, VERITAS REDISTILLED  
**Item #:** 2180  
**Lot #:** 22370036



## Certified Values:

| Specifications (Max Limits or as Specified) | Pass/Fail | Numerical Results |
|---|-----------|-------------------|
| Assay 32 - 38 %                             | Pass      | 37                |
| 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      | < 0.0000001       |
| 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      | 7.3               |
| Cd 1.0 ppb Max                              | Pass      | < 0.1             |

Not for direct use in food, cosmetics, finished pharmaceuticals or drug products. Supplier is not responsible for compliance with FDA Current Good Manufacturing Practice(cGMP) requirements, including without limitation those for finished drug products in 21 C.F.R Parts 210 and 211. Consult warranty limitations at [www.gfschemicals.com/Terms-And-Conditions](http://www.gfschemicals.com/Terms-And-Conditions)

For resale by GFS authorized distributors only.

GFS Chemicals, Inc. P.O. Box 245 Powell, OH 43065 \* Signed Orig. Doc. On File  
1-800-858-9682 (U.S. and Canada) 1-740-881-5501 (International) 1-740-881-5989 (Fax)

|                |      |       |
|----------------|------|-------|
| Ce 1.0 ppb Max | Pass | < 1.0 |
| Co 1.0 ppb Max | Pass | < 0.1 |
| Cr 1.0 ppb Max | Pass | < 0.1 |
| Cs 1.0 ppb Max | Pass | < 1.0 |
| Cu 1.0 ppb Max | Pass | < 0.1 |
| Dy 1.0 ppb Max | Pass | < 1.0 |
| Er 1.0 ppb Max | Pass | < 1.0 |
| Eu 1.0 ppb Max | Pass | < 1.0 |
| Fe 5.0 ppb Max | Pass | 1.5   |
| Ga 1.0 ppb Max | Pass | < 0.1 |
| Gd 1.0 ppb Max | Pass | < 1.0 |
| Ge 1.0 ppb Max | Pass | < 1.0 |
| Hf 1.0 ppb Max | Pass | < 1.0 |
| Hg 1.0 ppb Max | Pass | < 1.0 |
| Ho 1.0 ppb Max | Pass | < 1.0 |
| In 1.0 ppb Max | Pass | < 1.0 |
| Ir 1.0 ppb Max | Pass | < 1.0 |
| K 5.0 ppb Max  | Pass | 0.1   |
| La 1.0 ppb Max | Pass | < 1.0 |
| Li 2.0 ppb Max | Pass | < 0.1 |
| Lu 1.0 ppb Max | Pass | < 1.0 |

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|                |      |       |
|----------------|------|-------|
| Mg 2.0 ppb Max | Pass | 0.3   |
| Mn 1.0 ppb Max | Pass | < 0.1 |
| Mo 1.0 ppb Max | Pass | < 0.1 |
| Na 5.0 ppb Max | Pass | 2.5   |
| Nb 1.0 ppb Max | Pass | < 0.1 |
| Ni 1.0 ppb Max | Pass | < 0.1 |
| Os 1.0 ppb Max | Pass | < 1.0 |
| Pb 3.0 ppb Max | Pass | < 0.1 |
| Pd 1.0 ppb Max | Pass | < 1.0 |
| Pr 1.0 ppb Max | Pass | < 1.0 |
| Pt 1.0 ppb Max | Pass | < 1.0 |
| Rb 1.0 ppb Max | Pass | < 1.0 |
| Rh 1.0 ppb Max | Pass | < 1.0 |
| Ru 1.0 ppb Max | Pass | < 1.0 |
| Sb 1.0 ppb Max | Pass | < 1.0 |
| Sc 1.0 ppb Max | Pass | < 1.0 |
| Se 1.0 ppb Max | Pass | < 1.0 |
| Sm 1.0 ppb Max | Pass | < 1.0 |
| Sn 1.0 ppb Max | Pass | 0.1   |
| Sr 1.0 ppb Max | Pass | < 0.1 |
| Tb 1.0 ppb Max | Pass | < 1.0 |
| Te 1.0 ppb Max | Pass | < 1.0 |

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|                |      |       |
|----------------|------|-------|
| Th 1.0 ppb Max | Pass | < 1.0 |
| Ti 1.0 ppb Max | Pass | < 0.1 |
| U 1.0 ppb Max  | Pass | < 1.0 |
| V 1.0 ppb Max  | Pass | < 0.1 |
| W 1.0 ppb Max  | Pass | < 1.0 |
| Y 1.0 ppb Max  | Pass | < 1.0 |
| Yb 1.0 ppb Max | Pass | < 1.0 |
| Zn 2.0 ppb Max | Pass | 0.5   |
| Zr 1.0 ppb Max | Pass | < 0.1 |

**Status** Pass

**Comments**

**Certificate Create By:** Ryan Walsh  
**Best by:** September 21, 2027  
**Print Date:** Nov 14, 2022

**Signature on File**

**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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