

# Certificate of Analysis

## Acid Blank, 5% (v/v) Nitric Acid

**Lot Number:** 4312D57

**Product Number:** PNACID5

**Manufacture Date:** DEC 12, 2023

**Expiration Date:** NOV 2025

This product is intended for use in ICP, AA, or ICP-MS analyses for sample preparation, standard dilution, and as a reference blank. This product may also be suitable for other applications.

| Name        | CAS#      | Grade           |
|-------------|-----------|-----------------|
| Water       | 7732-18-5 | ACS/ASTM/USP/EP |
| Nitric Acid | 7697-37-2 | Trace Metals    |

| Test            | Specification         | Result        | NIST SRM# |
|-----------------|-----------------------|---------------|-----------|
| Aluminum (Al)   | Actual Value Reported | < 0.0009 ppm  | 3101      |
| Antimony (Sb)   | Actual Value Reported | < 0.0001 ppm  | 3102      |
| Arsenic (As)    | Actual Value Reported | < 0.0007 ppm  | 3103      |
| Barium (Ba)     | Actual Value Reported | < 0.0001 ppm  | 3104      |
| Beryllium (Be)  | Actual Value Reported | < 0.0001 ppm  | 3105      |
| Bismuth (Bi)    | Actual Value Reported | 0.0021 ppm    | 3106      |
| Boron (B)       | Actual Value Reported | < 0.00005 ppm | 3107      |
| Cadmium (Cd)    | Actual Value Reported | < 0.00007 ppm | 3108      |
| Calcium (Ca)    | Actual Value Reported | < 0.004 ppm   | 3109      |
| Cerium (Ce)     | Actual Value Reported | 0.0007 ppm    | 3110      |
| Cesium (Cs)     | Actual Value Reported | 0.0115 ppm    | 3111      |
| Chromium (Cr)   | Actual Value Reported | < 0.00006 ppm | 3112      |
| Cobalt (Co)     | Actual Value Reported | 0.0908 ppm    | 3113      |
| Copper (Cu)     | Actual Value Reported | < 0.00005 ppm | 3114      |
| Dysprosium (Dy) | Actual Value Reported | < 0.0001 ppm  | 3115      |
| Erbium (Er)     | Actual Value Reported | 0.0001 ppm    | 3116      |
| Europium (Eu)   | Actual Value Reported | < 0.00008 ppm | 3117      |
| Gadolinium (Gd) | Actual Value Reported | < 0.0002 ppm  | 3118      |
| Gallium (Ga)    | Actual Value Reported | < 0.0006 ppm  | 3119      |
| Germanium (Ge)  | Actual Value Reported | < 0.0003 ppm  | 3120      |
| Gold (Au)       | Actual Value Reported | < 0.0005 ppm  | 3121      |
| Hafnium (Hf)    | Actual Value Reported | 0.0027 ppm    | 3122      |
| Holmium (Ho)    | Actual Value Reported | < 0.0001 ppm  | 3123      |
| Indium (In)     | Actual Value Reported | < 0.00003 ppm | 3124      |
| Iridium (Ir)    | Actual Value Reported | 0.0024 ppm    |           |
| Iron (Fe)       | Actual Value Reported | I             | 3126      |
| Lanthanum (La)  | Actual Value Reported | 0.0003 ppm    | 3127      |
| Lead (Pb)       | Actual Value Reported | < 0.00003 ppm | 3128      |
| Lithium (Li)    | Actual Value Reported | < 0.03 ppm    | 3129      |
| Lutetium (Lu)   | Actual Value Reported | < 0.0003 ppm  | 3130      |
| Magnesium (Mg)  | Actual Value Reported | < 0.0007 ppm  | 3131      |

|                   |                       |               |      |
|-------------------|-----------------------|---------------|------|
| Manganese (Mn)    | Actual Value Reported | < 0.00002 ppm | 3132 |
| Mercury (Hg)      | Actual Value Reported | < 0.03 ppm    | 3133 |
| Molybdenum (Mo)   | Actual Value Reported | 0.0202 ppm    | 3134 |
| Neodymium (Nd)    | Actual Value Reported | < 0.0002 ppm  | 3135 |
| Nickel (Ni)       | Actual Value Reported | 0.0642 ppm    | 3136 |
| Niobium (Nb)      | Actual Value Reported | 0.0052 ppm    | 3137 |
| Osmium (Os)       | Actual Value Reported | < 0.003 ppm   |      |
| Palladium (Pd)    | Actual Value Reported | < 0.0004 ppm  | 3138 |
| Phosphorus (P)    | Actual Value Reported | I             | 3139 |
| Platinum (Pt)     | Actual Value Reported | 0.0021 ppm    | 3140 |
| Potassium (K)     | Actual Value Reported | 0.6341 ppm    | 3141 |
| Praseodymium (Pr) | Actual Value Reported | < 0.00003 ppm | 3142 |
| Rhenium (Re)      | Actual Value Reported | < 0.00003 ppm | 3143 |
| Rhodium (Rh)      | Actual Value Reported | < 0.00003 ppm | 3144 |
| Rubidium (Rb)     | Actual Value Reported | 0.0011 ppm    | 3145 |
| Ruthenium (Ru)    | Actual Value Reported | 0.0001 ppm    |      |
| Samarium (Sm)     | Actual Value Reported | < 0.002 ppm   | 3147 |
| Scandium (Sc)     | Actual Value Reported | < 0.00008 ppm | 3148 |
| Selenium (Se)     | Actual Value Reported | I             | 3149 |
| Silicon (Si)      | Actual Value Reported | < 0.007 ppm   | 3150 |
| Silver (Ag)       | Actual Value Reported | 0.0268 ppm    | 3151 |
| Sodium (Na)       | Actual Value Reported | 0.1841 ppm    | 3152 |
| Strontium (Sr)    | Actual Value Reported | < 0.00006 ppm | 3153 |
| Sulfur (S)        | Actual Value Reported | I             | 3154 |
| Tantalum (Ta)     | Actual Value Reported | 0.2221 ppm    | 3155 |
| Tellurium (Te)    | Actual Value Reported | 0.1210 ppm    | 3156 |
| Terbium (Tb)      | Actual Value Reported | < 0.00003 ppm | 3157 |
| Thallium (Tl)     | Actual Value Reported | I             | 3158 |
| Thorium (Th)      | Actual Value Reported | 0.0017 ppm    | 3159 |
| Thulium (Tm)      | Actual Value Reported | N             | 3160 |
| Tin (Sn)          | Actual Value Reported | < 0.0002 ppm  | 3161 |
| Titanium (Ti)     | Actual Value Reported | < 0.001 ppm   | 3162 |
| Tungsten (W)      | Actual Value Reported | 0.0593 ppm    | 3163 |
| Uranium (U)       | Actual Value Reported | 0.0001 ppm    | 3164 |
| Vanadium (V)      | Actual Value Reported | 0.0107 ppm    | 3165 |
| Ytterbium (Yb)    | Actual Value Reported | < 0.001 ppm   | 3166 |
| Yttrium (Y)       | Actual Value Reported | 0.0036 ppm    | 3167 |
| Zinc (Zn)         | Actual Value Reported | 0.0398 ppm    | 3168 |
| Zirconium (Zr)    | Actual Value Reported | 0.0051 ppm    | 3169 |

This standard is guaranteed to be stable and accurate provided the product is kept tightly capped and stored under normal laboratory conditions. Balances are calibrated using NIST traceable weights whose verification of maintenance and recalibration is documented per in-house Standard Operating Procedures. Class A glassware is also calibrated and routinely rechecked per in-house Standard Operating Procedures. Trace metal analyzed acids and Trace Metals Analyzed Water are used in the manufacture of this product. Triple cleaned containers are used in the manufacture of this product.

| Part Number | Size / Package Type | Shelf Life (Unopened Container) |
|-------------|---------------------|---------------------------------|
| PNACID5-1L  | 1 L natural poly    | 24 months                       |

**Recommended Storage:** 15°C - 30°C (59°F - 86°F)



Paul Brandon (12/12/2023)

Production Manager

This document is designed to comply with ISO Guide 31 "Reference Materials --  
Contents of Certificates and Labels."

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