

# Product Specification

## Multichem-17 Standard in 7% Nitric Acid

**Lot Number:** SAMPLE**Product Number:** RMULTI17**Manufacture Date:** N/A**Expiration Date:** N/A

The certified value for this product is confirmed in independent testing by a second qualified chemist. The uncertainty associated with the certified value is  $\pm 0.5\%$  relative, which is the sum of the estimated errors due to the purity of the raw material, the volumetric preparation of the solution and transpiration of the solution through the container wall.

The final solution concentration is confirmed by AA, ICP, or ICP-MS, and is traceable to NIST Standard Reference Material 3104a. All trace level elements were determined by ICP or ICP-MS.

**Matrix:** 7% Nitric Acid

| Name               | CAS#      | Grade           |
|--------------------|-----------|-----------------|
| Water              | 7732-18-5 | ACS/ASTM/USP/EP |
| Nitric Acid        | 7697-37-2 | Trace Metals    |
| Hydrofluoric Acid  | 7664-39-3 | Trace Metals    |
| Ammonium Hydroxide | 1336-21-6 | Trace Metals    |

| Test       | Specification    | Result |
|------------|------------------|--------|
| Appearance | Colorless liquid | N/A    |

| Analyte        | Analysis (ppm)  | Solute              | CAS#       | Grade       | NIST SRM# |
|----------------|-----------------|---------------------|------------|-------------|-----------|
| Calcium (Ca)   | 990-1010 ppm    | Calcium Carbonate   | 471-34-1   | High Purity | 3109      |
| Potassium (K)  | 297-303 ppm     | Potassium Carbonate | 584-08-7   | High Purity | 3141      |
| Magnesium (Mg) | 495-505 ppm     | Magnesium           | 7439-95-4  | High Purity | 3131      |
| Boron (B)      | 14.8-15.2 ppm   | Boric Acid          | 10043-35-3 | High Purity | 3107      |
| Strontium (Sr) | 49.5-50.5 ppm   | Strontium Carbonate | 1633-05-2  | High Purity | 3153      |
| Silicon (Si)   | 14.8-15.2 ppm   | Silicon             | 7440-21-3  | High Purity | 3150      |
| Barium (Ba)    | 5.94-6.06 ppm   | Barium Nitrate      | 10022-31-8 | High Purity | 3104      |
| Iron (Fe)      | 9.9-10.1 ppm    | Iron                | 7439-89-6  | High Purity | 3126      |
| Manganese (Mn) | 2.97-3.03 ppm   | Manganese           | 7439-96-5  | High Purity | 3132      |
| Zinc (Zn)      | 0.594-0.606 ppm | Zinc                | 7440-66-6  | High Purity | 3168      |
| Lead (Pb)      | 0.594-0.606 ppm | Lead                | 7439-92-1  | High Purity | 3128      |

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) |
|-------------|---------------------|---------------------------------|
| RMULTI17-1N | 1 L natural poly    | 12 months                       |

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

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