

# 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)

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

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