

# Product Specification

**Buffer, pH 7.00 ± 0.01 at 25°C, 150 mM Ionic Strength**

**Lot Number:** SAMPLE

**Product Number:** R1628029

**Manufacture Date:** N/A

**Expiration Date:** N/A

pH at other temperatures: 5°C: 7.09, 10°C: 7.06, 15°C: 7.04, 20°C: 7.02, 30°C: 6.99, 35°C: 6.98, 40°C: 6.98, 45°C: 6.97, 50°C: 6.97

The pH is certified and NIST traceable at 25°C only. Approximate pH values at other temperatures are calculated based on data collected for other similar buffers. The ionic strength is calculated based on the equilibrium solution concentrations (see below). Conductivity is dependent on ionic strength, but there is not a simple mathematical relationship to allow ionic strength to be calculated based on conductivity.

This solution was prepared with 0.0296 mol/L Sodium Phosphate Dibasic, 0.0207 mol/L Potassium Phosphate Monobasic, and 0.0406 mol/L Potassium Chloride. At pH 7.00, the equilibrium concentrations are [Na<sup>+</sup>] = 0.0592 M, [K<sup>+</sup>] = 0.0612 M, [Cl<sup>-</sup>] = 0.0406 M, [HPO<sub>4</sub><sup>2-</sup>] = 0.0296 M and [H<sub>2</sub>PO<sub>4</sub><sup>-</sup>] = 0.0206 M. The ionic strength = 1/2[(0.0592)(1) + (0.0612)(1) + (0.0406)(1) + (0.0296)(4) + (0.0206)(1)] = 0.150 M.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Phosphate Dibasic	7558-79-4	ACS
Potassium Chloride	7447-40-7	ACS
Potassium Dihydrogen Phosphate	7778-77-0	ACS

Test	Specification	Result	NIST SRM#
Appearance	Colorless liquid	N/A	
Conductivity at 25°C (Method: SQCP031, SQCP033)	Actual Value Reported	N/A	999
pH at 25°C (Method: SQCP027, SQCP033)	6.99-7.01	N/A	186-I-g, 186-II-g, 191d

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
R1628029-1A	1 L natural poly	24 months
R1628029-20F	20 L Cubitainer®	24 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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