



# Specification

1.60328.1000 Hydrochloric acid solution  $c(\text{HCl}) = 4 \text{ mol/l}$  (4 N) (20°C) Titripur®

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Form	liquid	
Amount-of-substance concentration	3.980 - 4.020	mol/l
Measurement uncertainty	+/- 0.012	mol/l
Traceability	NIST SRM	

Accreditation: This volumetric solution is analyzed by our calibration laboratory D-K-15185-01-00 which is accredited according to DIN EN ISO/IEC 17025 for analysis of amount-of-substance concentrations in volumetric solutions by DAkkS (Deutsche Akkreditierungsstelle - German National Accreditation Body). The accreditation certificate can be found at [www.sigmaldrich.com/ISO17025](http://www.sigmaldrich.com/ISO17025).

The concentration is determined by volumetric titration and refers to 20°C.

The amount-of-substance concentration of this volumetric solution is traceable to a primary standard reference material (SRM) from the National Institute of Standards and Technology, Gaithersburg, USA (NIST SRM 723 Tris(hydroxymethyl)aminomethane) by means of volumetric standard Tris(hydroxymethyl)aminomethane (article number 1.02408), certified reference material according to ISO 17034, analyzed by our accredited calibration laboratory of Merck KGaA, Darmstadt, Germany according to DIN EN ISO/IEC 17025. The uncertainty is expressed as expanded measurement uncertainty with a coverage factor  $k=2$  covering a confidence level of 95%.

Note: The titer is a correction factor to correct for variations of the volumetric solution, the titration equipment, the temperature and other laboratory conditions. For correct titration results it is recommended to determine a titer with the laboratory specific equipment and under laboratory specific conditions directly after opening a new bottle and at regular time intervals.

Ayfer Yildirim

Responsible laboratory manager quality control

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