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ProductInformation

TRIS-HCl, 1 M STOCK SOLUTION, pH 7.00
Molecular Biology Reagent

Product No. **T 2413**
Store at room temperature

Product Description

The pH values of tris buffer solutions are temperature- and concentration-dependent. Between 5 °C and 25 °C, the pH value increases an average of 0.03 pH units for each °C decrease in temperature. As the buffer temperature increases from 25 °C to 37 °C, the pH value decreases an average of 0.025 pH units per °C.

Increasing the concentration of tris from 0.05 M to 0.5 M will increase the pH value by about 0.05 units. Decreasing the concentration from 0.05 M to 0.005 M will decrease the pH value by about 0.05 units.

To eliminate most errors frequently associated with pH measurements of tris solutions, Sigma offers a glass-calomel combination electrode. This electrode is suitable for a pH range of 0-14 and a temperature range of –5 °C to 80 °C. See the equipment section of the current Sigma catalog for listings.

Product Summary

Prepared with Trizma® Base, Biotechnology Performance Certified (Product No. T 6066) and 18 megohm water
Concentration: 0.95-1.05 M
pH: 6.95-7.05 at 25 °C
DNase, RNase, Protease: None detected

Endonuclease-exonuclease

One µg of λ *Hin*d III fragments was incubated for 16 hours at 37 °C with Tris-HCl, 1 M stock solution, at a final concentration of 0.25 M in a 50 µl reaction mixture containing 30 mM Tris-HCl, pH 7.8, 50 mM NaCl and 10 mM $MgCl_2$. No degradation of the DNA fragments was detected by agarose gel electrophoresis. Detection limit: Degradation of 10% of the DNA substrate is detectable.

Endonuclease (Nickase)

One µg of pBR322 DNA was incubated with Tris-HCl, 1 M stock solution, at a final concentration of 0.25 M in a 50 µl reaction mixture containing 30 mM Tris-HCl, pH 7.8, 50 mM NaCl and 10 mM $MgCl_2$ for 16 hours at 37 °C. No conversion of the covalently closed circular DNA to the nicked or linear form was observed by agarose gel electrophoresis. Detection limit: Conversion of 1% of the DNA substrate is detectable.

RNase

Two µg of transfer RNA were incubated with Tris-HCl, 1 M stock solution, at a final concentration of 0.25 M in a 50 µl reaction mixture containing 30 mM Tris-HCl, pH 7.8, 50 mM NaCl and 10 mM $MgCl_2$ for 16 hours at 37 °C. No degradation of the tRNA was detected by polyacrylamide gel electrophoresis. Detection limit: Degradation of 10% of the tRNA substrate is detectable.

Protease

0.5% FITC-Casein was incubated with Tris-HCl, 1 M stock solution, at a final concentration of 0.2 M in a 50 µl reaction mixture for 1 hour at 37 °C. Liberated FITC equivalents are quantitated fluorometrically.

Detection limit: 8.5×10^{-6} µmoles of FITC released per minute.

Modified from: Twining, S.S., Analytical Biochemistry, **143**, 30-34 (1984).

Reference

Sigma Technical Bulletin 106B

KMR 07/01