MP Biomedicals, LLC

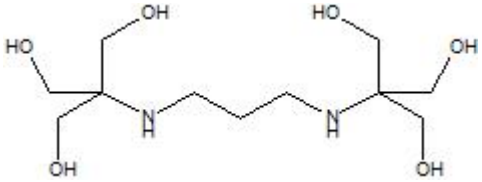
29525 Fountain Parkway
Solon, Ohio 44139

Telephone: 440/337-1200
Toll Free: 800/854-0530
Fax: 440/337-1180
mailto: biotech@mpbio.com
web: http://www.mpbio.com

TECHNICAL INFORMATION

Catalog Number: 180943
Bis-Tris Propane

Structure:



Molecular Formula: $C_{11}H_{26}N_2O_6$
Molecular Weight: 282.34
CAS # : 64431-96-5
EC # :264-899-3
Synonym: 1,3-bis[Tris(hydroxymethyl)methylamino]propane
Physical Appearance: White crystalline powder
Solubility: Soluble in water (100 mg/ml-clear, colorless solution). The pH of a 1 M solution is between 10 and 12 at room temperature. Solutions can be autoclaved. Store stock solutions at 2-8°C for 3 to 4 months.
Useful pH Range: 6.3-9.5
pKa_1: 6.8 @ 25°C
pKa_2: 9.0 @ 25°C
DpK/DT: -0.03
Description: Bis-Tris Propane is a non-zwitterionic buffer with a wide buffering range. This wide buffering range is due to its two pKa values being so close[1]. A solution is usually titrated to the pH desired using hydrochloric acid.
Because of the wide buffering range, particularly down to pH 6-7, this buffer has been used to enhance the stability or activity of restriction enzymes, compared to Tris buffer (which is a poor buffer below pH 7.5 and has a comparatively large change in pKa with temperature[2]). It can also be used in ion exchange chromagraphy[3] typically at 20 mM concentration.

Reference:

– Eckert, K. A., and Kunkel, T. A., DNA polymerase fidelity and the polymerase chain reaction. PCR Methods Appl., 1(1), 17-24 (1991).
– Stoll, V.S. and Blanchard, J.S., "Guide to protein purification." *Methods in Enzymology*, **v. 182**, 29 (1990).
– Williams A. and Frasca V. "Ion-Exchange Chromatography" *Current Protocols in Protein Science,* **15**:8.2:8.2.1–8.2.30. (2001)