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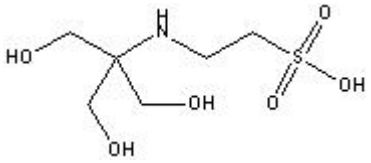
TECHNICAL INFORMATION

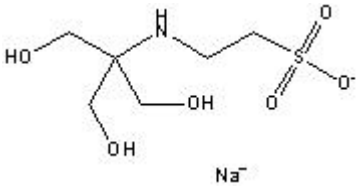
Catalog Number: 103008, 152461, 194555, 194853
TES

Structure:

Free acid



Sodium Salt



	Free Acid	*Sodium Salt*
Molecular Formula:	$C_6H_{15}NO_6S$	$C_6H_{14}NO_6SNa$
Molecular Weight	229.2	251.2
CAS #	7365-44-8	70331-82-7
pH (1 M solution in water)	~ 3.5 to 5.9	~ 9.8 to 10.1

Synonyms: N-Tris-[hydroxymethyl]methyl-2-aminoethanesulfonic acid; 2-[(2-Hydroxy-1,1- bis [hydroxymethyl]ethyl)amino]ethanesulfonic acid

Physical Description: White crystalline powder

pKa: 7.5 @ 25°C

DpK/DT: -0.02.[1]

Useful pH Buffering Range: 6.8 - 8.2

Metal Ion Binding: Negligible.[2]

Physical Description: White crystalline powder

Description: TES was originally developed by Good[2] as a buffer which has a midrange pKa, maximum water solubility and minimum solubility in all other solvents, minimal salt effects, minimal change in pKa with temperature, chemically and enzymatically stable, minimal absorption in visible or UV spectral range, and is easily synthesized. It is an analog of Tris. It probably exists in solution as a zwitterion.

Because the pKa is 7.4 (physiological pH), TES has potential for a variety of biological applications. In many culture media that require metal cations, many buffers cannot be used due to chelation or precipitation (citrate or phosphate, for example). TES was found to be beneficial in a study of succinate oxidation.[2]

TES is a suitable buffer ofr epidermal cell growth at pH 7.4 - 7.9 where additional buffering capacity is required.[3]

Typical Preparation: A buffer using TES free acid can be prepared by titrating the free acid with 0.5 N sodium hydroxide to the desired pH. Alternatively, solutions of equimolar TES free acid and TES sodium salt can be mixed to attain a buffer of the desired pH. Titrating a solution of TES sodium salt with HCl is not recommended since the resulting solution will contain a half-equivalent of sodium chloride.

Purity: 99.89%

Solubility: Very soluble in water (1 M solution - clear, colorless). Sterilization should be done by filtration through a 0.2 micron filter. Autoclaving is not recommended. For molecular biology, treat the water with DEPC prior to adding the tricine. DEPC reacts with amino groups and may help to decompose the TES.

Availability:

Catalog Number	Description	Size
103008	TES. free acid	10 g 25 g 100 g 500 g 1 kg
194555	TES, free acid, cell culture reagent	10 g 25 g 100 g 1 kg 5 kg
194853	TES, free acid, molecular biology reagent	25 g 100 g 500 g
152461	TES, Sodium Salt	25 g 100 g 500 g

References:

– *Methods in Enzymology*, **v. 104**, 404 (1984).
– Good, N.E., et al., *Biochemistry*, **v. 5**, 467 (1966).
– Hammar, H. and Halprin, K., *Epidermis Dis., Proc. Eur. Soc. Dermatol. Res. Symp.*, **1979**, 243 (1981).