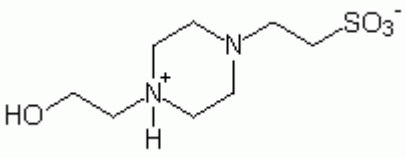


HEPES (Free Acid)

----- Biological Buffers

Product Name:	HEPES
Cat No:	ZB071
CAS#:	[7365-45-9]
Category:	Biological Buffers
Molecular Formula:	C ₈ H ₁₈ N ₂ O ₄ S
Formula Weight:	238.3
Structure:	
Purity:	>99%
Form:	White Crystalline Powder
Description:	pH range 6.8-8.2 pKa 25°C..... 7.5
Synonyms:	4-(2-Hydroxyethyl)-1-piperazineethanesulfonic acid; hepes; HEPES, free acid; N-(2-hydroxyethyl)piperazine-N'-(2-ethanesulfonic acid); N-(2-Hydroxyethyl)piperazine-N'-ethanesulfonic Acid;
Size:	8603101000100:100g; 8603102000500:500g; 8603103001000:1kg; 8603104025000:25kg; Bulk;
Price:	EUR600.00/Kg

Description

A buffer is most effective when the pH is equal to the pKa of that buffer, and most efficient when in the range of one pH unit above and below that value. The pKa of sodium bicarbonate, for example, is 6.1, yielding the best buffering capacity at a pH of 5.1-7.1. When higher pH values are needed, or to keep the pH steady, HEPES is often added.

The organic zwitterionic buffer HEPES is commonly used to maintain pH levels of basal media in cell culture. In comparison to the inorganic sodium bicarbonate buffer system, HEPES

is more suitable for buffering in the physiological pH range of 7.2-7.6.

HEPES is a "Good" buffer, containing both positive and negative ionizable groups, where the secondary and tertiary amine groups provide the positive charge and the negative charges are offered by the sulfonic and carboxylic acid groups.

Unlike the bicarbonate buffering system that requires the use of a CO₂ incubator, the HEPES buffering system may be used with or without a CO₂ atmosphere. When HEPES is used with exogenous CO₂, however, the concentration of HEPES must be more than double the amount of bicarbonate for adequate buffering.

Working Concentration:

HEPES may be added to media at concentrations of 10mM to 25 mM. Concentrations of 50 mM and above are not recommended and may be toxic to cells.

Storage

RT

Powder: Ambient (15-30C); protected from light

Shipped at RT



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