

Technical Information

HEPES 1M Solution Sterile filtered

Product Code:TCL1021

Molecular Formula: $C_8H_{18}N_2O_4S$

Molecular Weight: 238.3

CAS number: 7365-45-9

Synonym: 4-(2-hydroxyethyl)-1-piperazineethanesulfonic acid.

HEPES is a zwitterionic organic buffering agent. It is stable, water soluble and does not react with divalent cations. It has a pKa of 7.5 at 37°C and offers an optimal buffering range of pH 6.8 - 8.2. It maintains the physiological pH despite changes in the carbondioxide concentrations which take place due to cellular metabolism.

HEPES is widely used in cell culture media to maintain the pH levels of basal media. Unlike the bicarbonate buffers which require CO₂, HEPES containing media do not need CO₂ atmosphere for buffering. HEPES is better than bicarbonate buffer in controlling the pH of the media in cell culture.

HEPES is generally used at a concentration of 10mM to 25mM for cell culture application. After addition of HEPES the pH of the media is adjusted with NaOH or HCl. It is also necessary to maintain the appropriate osmolality in the medium. Concentrations of 50mM and above can be toxic to the cells and are not recommended.

pKa at (20°C) = 7.55

pKa at (37°C) = 7.31 Δ pKa/°C = -0.014

TCL1021 is 1M HEPES solution prepared in sterile tissue culture grade water.

Quality control

Appearance

Colorless, clear solution.

pH

7.00 -7.60

Sterility

No bacterial or fungal growth is observed after 14 days of incubation, as per USP specification.

Cultural Response

Growth Promotion Test.

Endotoxin Content

NMT 5EU/ml

Storage and Shelf Life

Store the product at 2 - 8°C.

Shelf life of the product is 24 months.

Use before expiry date given on the product label.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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