HEPES free acid
Cell Culture Tested

Product Code: TC050

Product Description:
Synonym: 4-(2-hydroxyethyl)-1-piperazineethane-sulfonic acid
Molecular weight: 238.3
Molecular formula: C₈H₁₈N₂O₄S
CAS No: 7365-45-9

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 carbon dioxide 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
ΔpKa/°C = -0.014

Quality Control:
Appearance
White crystalline powder.
Solubility
Clear colorless solution at 50gms in 100ml of water.
pH of 50% solution in water
5.00 - 6.50
Loss on drying
NMT 1.0%
Assay
NLT 99%
Cell Culture Test
Passes

Storage and Shelf Life:
Store at 10-30°C away from bright light.
Shelf life is 36 months.
Use before expiry date given on the product label.
Disclaimer:

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