Tris base

Tris (hydroxylmethyl) aminomethane
Cell Culture Tested

Product Code: TC072

Product Description :

Molecular Weight: 121.14
Molecular Formula: $NH_2C(CH_2OH)_3$
CAS No: 77-86-1
Synonyms: THAM, Tris (hydroxymethyl) aminomethane

Tris is abbreviation of an organic compound Tris(hydroxymethyl)aminomethane, also known as THAM. It is prepared in two steps from nitromethane via intermediate $(HOCH_2)_3CNO_2$. Reduction of the latter gives tris(hydroxymethyl)aminomethane.

Tris has a pKa of 8.10 and pH range of 7.0 to 9.2 that coincides with the physiological pH of most living organisms because of which it is commonly used as a component of buffer solutions in biology, biochemistry and molecular biology applications. Tris salts are also used for crystallization of proteins at various pH values. Tris does not precipitate calcium salts and is of value in maintaining solubility of manganese salts. Neither Tris Base nor Tris hydrochloride by themselves provide adequate buffering capacity. Generally the two need to be mixed together to provide a buffer with pH between 7 and 9 to provide adequate buffering.

Effect of temperature on pH of Tris solutions:
As temperature of Tris solutions decreases from 25°C to 5°C, pH value increases with an average of 0.03 units per °C. As temperature of Tris solutions increases from 25°C to 37°C, the pH decreases with an average of 0.025 units per °C.

Effect of concentration of Tris solutions on pH:
Increase in the total Tris concentration from 0.05M to 0.5M leads to increase in pH by about 0.05 whereas decrease in concentration from 0.05M to 0.005M leads to decrease in pH by about 0.05.

Directions :

Preparation instructions:
Tris base is soluble in water. Tris-base solutions can be sterilized by autoclaving or by filtering through a sterile membrane filter with porosity of 0.22 microns.

Quality Control:

Appearance
White to crystalline powder.

Solubility
Clear colorless to faint yellow solution at 10gm in 100ml of water .

pKa
8.1 at 25°C

Heavy metals
NMT 0.0005%

Loss on drying
NMT 0.5%

Assay
NLT 99.00%

Cell Culture Test
Passes

Storage and Shelf Life:

Store at 10°-30°C.
Shelf life of the product is 48 months.
Use before expiry date given on the product label.

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