



# Common Biological Buffers

Many buffers change pH with temperature. This is an important consideration when using thermostable enzymes at elevated temperatures. Use the temperature coefficient given in the table to predict what the buffer will be at any given temperature.

	pH 6	7	8	9	10	11	Useful pH range	pKa (at 25°)	Temperature Coefficient
ACETATE							3.6-5.6	4.76	-0.0002
MES							5.5-6.7	6.10	-0.011
CITRATE							5.5-7.2	6.40	0.0
BIS-TRIS							5.8-7.2	6.50	0.0
MOPS							6.5-7.9	7.20	0.015
PHOSPHATE							5.8-8.0	7.20	-0.0028
CARBONATE							6.0-8.0	6.35	-0.0055
HEPES							6.8-8.2	7.48	-0.014
TRICINE							7.4-8.8	8.05	-0.021
TRIS							7.0-9.0	8.06	-0.028
BICINE							7.6-9.0	8.26	-0.018
TAPS							7.7-9.1	8.40	0.018
TAURINE							8.4-9.6	9.06	-0.022
BORATE							8.5-10.2	9.23	-0.0082
CAPS							9.7-11.1	10.40	-0.009

*Example: What is the pH of Tris pH 9.5 at 72° C?*

*All Teknova buffers are adjusted at 25° C. Unless specified otherwise.*

*From the chart the temperature coefficient is -0.03.  
72° C - 25° C = 47° C,*

*multiplying by the coefficient we get 47 \* -0.03 = -1.41  
finally 9.5 + (-1.41) = 8.09*

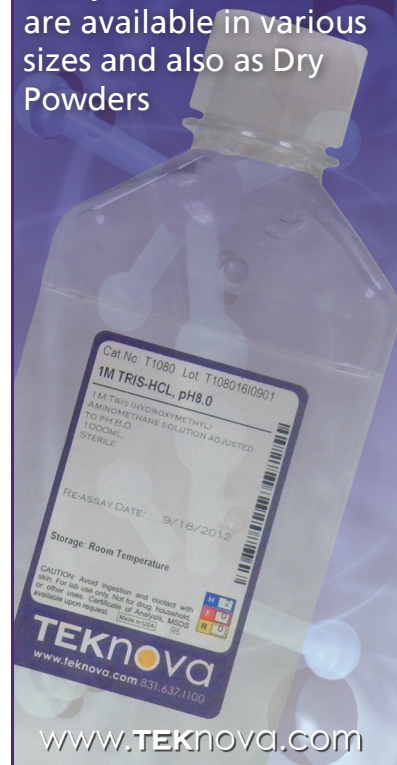


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**TEKNOVA**  
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Description	Cat No	Size
30mM MES Buffer pH 6.5, Endotoxin Free, 4 Liter	M0404	4L
30mM MES Buffer pH 6.5, Endotoxin Free, 10 Liter	M0410	10L
1M MES pH 6, Sterile. Endotoxin Free	M7410	1000mL
10X MOPS Buffer Solution. 1000mL. Sterile	M1095	1000mL
1M MOPS, pH 7, 1000mL, Sterile. Endotoxin Free.	M7405	1000mL
1M HEPES, pH 7.5 . 1000mL, Sterile, Dnase/Rnase Free.	H1035	1000mL
0.5M HEPES, pH 7.5, 1 Liter	H1575	1000mL
100mM Hepes, pH 7.0, sterile. 1000mL	H1010	1000mL
250mM Tris. pH 7.5 at 25°C. 4L. Sterile	T0664	4L
1M Tris-HCl solution, pH 6.8 1000mL, Sterile.	T1068	1000mL
1M Tris-HCl solution, pH 7.0 1000mL, Sterile.	T1070	1000mL
1M Tris-HCl solution, pH 7.4 1000mL, Sterile.	T1074	1000mL
1M Tris-HCl solution, pH 7.5 1000mL, Sterile.	T1075	1000mL
1M Tris-HCl solution, pH 7.8 1000mL, Sterile.	T1078	1000mL
1M Tris-HCl solution, pH 8.0 1000mL, Sterile.	T1080	1000mL
1M Tris-HCl solution, pH 8.5 1000mL, Sterile.	T1085	1000mL
1M Tris-HCl solution, pH 9.0 1000mL, Sterile.	T1090	1000mL
1M Tris Base. Sterile solution.	T0550	1000mL
1M Taps Buffer. pH 9.0, 1 Liter, Sterile	T8090	1000mL
Acetate Buffer pH 5.5 Endotoxin Free. Sterile 500ml	A1020	500mL
0.1M Citrate Buffer, pH 6.0. 1000mL, Sterile	Q2446	1000mL
10X Borate Saline Buffer. 1000mL	B0230	1000mL
1M Sodium Phosphate, Diabasic, 1000mL	S0240	1000mL
1M Sodium Phosphate, Monobasic, 1000mL	S0241	1000mL
20mM Phosphate with 0.9% Saline, pH 7.0. 1000mL, Sterile.	P0273	1000mL
10 x Phosphate Buffer Supplement. 100mL, Sterile	P7100	100mL
0.05M Potassium Phosphate Buffer. pH 6.5. 20L Biotainer, Sterile	P2421	20L
2M Tris-Acetate Buffer, pH 8.3, 1mL tubes, 50 pack	T9983	50 Pack

Many of our buffers are available in various sizes and also as Dry Powders



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