

	pH						
	4	5	6	7	8	9	
[Polyethylene Glycol 6000 (% w/v)]	5	A1	A2	A3	A4	A5	A6
	10	B1	B2	B3	B4	B5	B6
	20	C1	C2	C3	C4	C5	C6
	30	D1	D2	D3	D4	D5	D6

The pH indicated on each Grid Screen reagent is the ACTUAL pH of the reagent at 22.0°C. All pH adjustments have been made using hydrochloric acid or sodium hydroxide.

Tube Number	Polyethylene Glycol 6000 [% w/v]	Tube Number	Buffer
A1.	5	A1.	0.1 M Citric Acid pH 4.0
B1.	10	B1.	0.1 M Citric Acid pH 4.0
C1.	20	C1.	0.1 M Citric Acid pH 4.0
D1.	30	D1.	0.1 M Citric Acid pH 4.0
A2.	5	A2.	0.1 M Citric Acid pH 5.0
B2.	10	B2.	0.1 M Citric Acid pH 5.0
C2.	20	C2.	0.1 M Citric Acid pH 5.0
D2.	30	D2.	0.1 M Citric Acid pH 5.0
A3.	5	A3.	0.1 M MES pH 6.0
B3.	10	B3.	0.1 M MES pH 6.0
C3.	20	C3.	0.1 M MES pH 6.0
D3.	30	D3.	0.1 M MES pH 6.0
A4.	5	A4.	0.1 M HEPES pH 7.0
B4.	10	B4.	0.1 M HEPES pH 7.0
C4.	20	C4.	0.1 M HEPES pH 7.0
D4.	30	D4.	0.1 M HEPES pH 7.0
A5.	5	A5.	0.1 M Tris pH 8.0
B5.	10	B5.	0.1 M Tris pH 8.0
C5.	20	C5.	0.1 M Tris pH 8.0
D5.	30	D5.	0.1 M Tris pH 8.0
A6.	5	A6.	0.1 M Bicine pH 9.0
B6.	10	B6.	0.1 M Bicine pH 9.0
C6.	20	C6.	0.1 M Bicine pH 9.0
D6.	30	D6.	0.1 M Bicine pH 9.0

Chemical Analysis

Polyethylene Glycol 6,000

M_r 5000-7000

Peroxide <0.001%	Aldehyde < 0.005%	DNases, RNases, proteases, phosphatases: None detected									
Cl <0.005%	Co <0.0005%	Mo <0.0005%	SO ₄ <0.005%	Cr <0.0005%	Na <0.02%						
Al <0.0005%	Cu <0.0005%	Ni <0.0005%	As <0.00001%	Fe <0.0005%	Pb <0.0005%						
Ba <0.0005%	K <0.0005%	Sr <0.0005%	Bi <0.0005%	Li <0.0005%	Zn <0.0005%						
Ca <0.001%	Mg <0.0005%	Cd <0.0005%	Mn <0.0005%								

Citric Acid anhdrous

M_r 192.43

C₆H₈O₇

Cl <0.0005%	Oxalate <0.05%	PO ₄ <0.0005%	SO ₄ <0.002%	Tartrate <0.2%	Ca <0.005%
Cd <0.0005%	Co <0.0005%	Cu <0.0005%	Fe <0.0005%	Ni <0.0005%	Pb <0.0005%
Zn <0.0005%					

MES

M_r 195.25

C₆H₁₃NO₄S

≥ 99.5% Purity

Co <0.0005%	Mo <0.0005%	SO ₄ <0.0005%	Cr <0.0005%	Cl <0.005%	Ag <0.00002%
Al <0.0005%	Cu <0.0005%	Ni <0.0002%	As <0.00001%	Fe <0.0005%	Pb <0.00002%
Ba <0.0005%	K <0.01%	Sr <0.0005%	Bi <0.0005%	Li <0.0005%	Zn <0.0005%
Ca <0.002%	Mg <0.0005%	Cd <0.0005%	Mn <0.0005%	PO ₄ <0.002%	Hg <0.00001%

Reagent Formulation and Specification Data Sheet

HEPES
 M_r 238.31

 $C_8H_{18}N_2O_4S$ $\geq 99.5\%$ Purity

Co	<0.0005%	Mo	<0.0005%	Cr	<0.0005%	Cl	<0.0005%	Ag	<0.00002%	Pb	<0.00002%
Al	<0.0005%	Cu	<0.0005%	Ni	<0.0002%	As	<0.00001%	Fe	<0.0005%	Zn	<0.0005%
Ba	<0.0005%	K	<0.01%	Sr	<0.0005%	Bi	<0.0005%	Li	<0.0005%	Hg	<0.00001%
Ca	<0.001%	Mg	<0.0005%	Cd	<0.0005%	Mn	<0.0005%	PO ₄	<0.002%		

Tris
 M_r 121.14

 $NH_2C(CH_2OH)_3$ $\geq 99.8\%$ Purity

Co	<0.0005%	Mo	<0.0005%	SO ₄	<0.0005%	Cr	<0.0005%	Cl	<0.0005%	Ag	<0.00002%
Al	<0.0005%	Cu	<0.0005%	Ni	<0.0002%	As	<0.00001%	Fe	<0.0005%	Pb	<0.00002%
Ba	<0.0005%	K	<0.01%	Sr	<0.0005%	Bi	<0.0005%	Li	<0.0005%	Zn	<0.0005%
Ca	<0.001%	Mg	<0.0005%	Cd	<0.0005%	Mn	<0.0005%	PO ₄	<0.002%	Hg	<0.00001%

Bicine
 M_r 163.18

 $C_6H_{13}NO_4$ $\geq 99.5\%$ Purity

Co	<0.0005%	Mo	<0.0005%	SO ₄	<0.0005%	Cr	<0.0005%	Cl	<0.0005%	Ag	<0.00002%
Al	<0.0005%	Cu	<0.0005%	Ni	<0.0002%	As	<0.00001%	Fe	<0.0005%	Pb	<0.00002%
Ba	<0.0005%	K	<0.01%	Sr	<0.0005%	Bi	<0.0005%	Li	<0.0005%	Zn	<0.0005%
Ca	<0.001%	Mg	<0.0005%	Cd	<0.0005%	Mn	<0.0005%	PO ₄	<0.002%	Hg	<0.00001%

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[MPD (% v/v)]	pH						Tube Number	(±)-2-Methyl-2,4-Pentanediol [% v/v]	Tube Number	Buffer
	4	5	6	7	8	9				
10	A1	A2	A3	A4	A5	A6	A1. 10 B1. 20 C1. 40 D1. 65	A1. 0.1 M Citric Acid pH 4.0 B1. 0.1 M Citric Acid pH 4.0 C1. 0.1 M Citric Acid pH 4.0 D1. 0.1 M Citric Acid pH 4.0		
20	B1	B2	B3	B4	B5	B6	A2. 10 B2. 20 C2. 40 D2. 65	A2. 0.1 M Sodium Acetate trihydrate pH 5.0 B2. 0.1 M Sodium Acetate trihydrate pH 5.0 C2. 0.1 M Sodium Acetate trihydrate pH 5.0 D2. 0.1 M Sodium Acetate trihydrate pH 5.0		
40	C1	C2	C3	C4	C5	C6	A3. 10 B3. 20 C3. 40 D3. 65	A3. 0.1 M MES pH 6.0 B3. 0.1 M MES pH 6.0 C3. 0.1 M MES pH 6.0 D3. 0.1 M MES pH 6.0		
65	D1	D2	D3	D4	D5	D6	A4. 10 B4. 20 C4. 40 D4. 65	A4. 0.1 M HEPES pH 7.0 B4. 0.1 M HEPES pH 7.0 C4. 0.1 M HEPES pH 7.0 D4. 0.1 M HEPES pH 7.0		
							A5. 10 B5. 20 C5. 40 D5. 65	A5. 0.1 M Tris pH 8.0 B5. 0.1 M Tris pH 8.0 C5. 0.1 M Tris pH 8.0 D5. 0.1 M Tris pH 8.0		
							A6. 10 B6. 20 C6. 40 D6. 65	A6. 0.1 M Bicine pH 9.0 B6. 0.1 M Bicine pH 9.0 C6. 0.1 M Bicine pH 9.0 D6. 0.1 M Bicine pH 9.0		

The pH indicated on each Grid Screen reagent is the ACTUAL pH of the reagent at 22.0°C. All pH adjustments have been made using hydrochloric acid or sodium hydroxide.

Chemical Analysis**(±)-2-Methyl-2,4-pentanediol (MPD)**M_r 118.18C₆H₁₄O₂

Al	<0.0001%	Cd	<0.0001%	Fe	<0.0001%	Mn	<0.0001%	Ni	<0.0001%	Zn	<0.0001%
Ba	<0.0001%	Co	<0.0001%	K	<0.002%	Mo	<0.0001%	Pb	<0.0001%	SO ₄	<0.005%
Bi	<0.0001%	Cr	<0.0001%	Li	<0.0001%	Na	<0.002%	Sr	<0.0001%	Cl	<0.005%
Ca	<0.0005%	Cu	<0.0001%	Mg	<0.0001%						

Citric Acid anhdrousM_r 192.43C₆H₈O₇

Cl	<0.0005%	Oxalate	<0.05%	PO ₄	<0.0005%	SO ₄	<0.002%	Tartrate	<0.2%	Ca	<0.0005%
Cd	<0.0005%	Co	<0.0005%	Cu	<0.0005%	Fe	<0.0005%	Ni	<0.0005%	Pb	<0.0005%
Zn	<0.0005%										

Sodium AcetateM_r 82.02C₂H₃NaO₂

≥ 99.5% Purity

Cl	<0.0005%	Co	<0.0005%	Mo	<0.0005%	SO ₄	<0.002%	Cr	<0.0005%	Zn	<0.0005%
Al	<0.0005%	Cu	<0.0005%	Ni	<0.0005%	As	<0.00001%	Fe	<0.0005%	Pb	<0.0005%
Ba	<0.0005%	K	<0.005%	Sr	<0.0005%	Bi	<0.0005%	Li	<0.0005%	Ca	<0.001%
Mg	<0.0005%	Cd	<0.0005%	Mn	<0.0005%	PO ₄	<0.0005%				

MESM_r 195.25C₆H₁₃NO₄S

≥ 99.5% Purity

Co	<0.0005%	Mo	<0.0005%	SO ₄	<0.0005%	Cr	<0.0005%	Cl	<0.005%	Ag	<0.00002%
Al	<0.0005%	Cu	<0.0005%	Ni	<0.0002%	As	<0.00001%	Fe	<0.0005%	Pb	<0.00002%
Ba	<0.0005%	K	<0.01%	Sr	<0.0005%	Bi	<0.0005%	Li	<0.0005%	Zn	<0.0005%
Ca	<0.002%	Mg	<0.0005%	Cd	<0.0005%	Mn	<0.0005%	PO ₄	<0.002%	Hg	<0.00001%

Reagent Formulation and Specification Data Sheet

HEPES

M_r 238.31

$C_8H_{18}N_2O_4S$ $\geq 99.5\%$ Purity

Co	<0.0005%	Mo	<0.0005%	Cr	<0.0005%	Cl	<0.0005%	Ag	<0.00002%	Pb	<0.00002%
Al	<0.0005%	Cu	<0.0005%	Ni	<0.0002%	As	<0.00001%	Fe	<0.0005%	Zn	<0.0005%
Ba	<0.0005%	K	<0.01%	Sr	<0.0005%	Bi	<0.0005%	Li	<0.0005%	Hg	<0.00001%
Ca	<0.001%	Mg	<0.0005%	Cd	<0.0005%	Mn	<0.0005%	PO ₄	<0.002%		

Tris

M_r 121.14

$NH_2C(CH_2OH)_3$ $\geq 99.8\%$ Purity

Co	<0.0005%	Mo	<0.0005%	SO ₄	<0.0005%	Cr	<0.0005%	Cl	<0.0005%	Ag	<0.00002%
Al	<0.0005%	Cu	<0.0005%	Ni	<0.0002%	As	<0.00001%	Fe	<0.0005%	Pb	<0.00002%
Ba	<0.0005%	K	<0.01%	Sr	<0.0005%	Bi	<0.0005%	Li	<0.0005%	Zn	<0.0005%
Ca	<0.001%	Mg	<0.0005%	Cd	<0.0005%	Mn	<0.0005%	PO ₄	<0.002%	Hg	<0.00001%

Bicine

M_r 163.18

$C_6H_{13}NO_4$ $\geq 99.5\%$ Purity

Co	<0.0005%	Mo	<0.0005%	SO ₄	<0.0005%	Cr	<0.0005%	Cl	<0.0005%	Ag	<0.00002%
Al	<0.0005%	Cu	<0.0005%	Ni	<0.0002%	As	<0.00001%	Fe	<0.0005%	Pb	<0.00002%
Ba	<0.0005%	K	<0.01%	Sr	<0.0005%	Bi	<0.0005%	Li	<0.0005%	Zn	<0.0005%
Ca	<0.001%	Mg	<0.0005%	Cd	<0.0005%	Mn	<0.0005%	PO ₄	<0.002%	Hg	<0.00001%

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Tube Number	Salt	Tube Number	Buffer †	Tube Number	Precipitant
1.	0.1 M Sodium Chloride	1.	0.1 M Sodium Acetate trihydrate pH 4.6	1.	12% v/v 2-Methyl-2,4-pentanediol
2.	0.1 M Zinc Acetate dihydrate	2.	0.1 M Sodium Acetate trihydrate pH 4.6	2.	12% w/v Polyethylene Glycol 4000
3.	0.2 M Ammonium Sulfate	3.	0.1 M Sodium Acetate trihydrate pH 4.6	3.	10% w/v Polyethylene Glycol 4000
4.	0.1 M Sodium Chloride	4.	0.1 M Sodium Acetate trihydrate pH 4.6	4.	12% v/v Isopropanol
5.	None	5.	0.1 M Sodium Acetate trihydrate pH 4.6	5.	12% w/v Polyethylene Glycol 4000
6.	None	6.	0.1 M Sodium Acetate trihydrate pH 4.6	6.	1.0 M Ammonium Sulfate
7.	None	7.	0.1 M Sodium Acetate trihydrate pH 4.6	7.	1.0 M Magnesium Sulfate heptahydrate
8.	0.1 M Magnesium Chloride hexahydrate	8.	0.1 M Sodium Acetate trihydrate pH 4.6	8.	18% v/v Polyethylene Glycol 400
9.	0.1 M Lithium Sulfate monohydrate	9.	0.1 M Sodium Acetate trihydrate pH 4.6	9.	1.0 M mono-Ammonium dihydrogen Phosphate
10.	0.1 M Sodium Chloride	10.	0.1 M Sodium Acetate trihydrate pH 4.6	10.	12% w/v Polyethylene Glycol 6000
11.	0.1 M Magnesium Chloride hexahydrate	11.	0.1 M Sodium Acetate trihydrate pH 4.6	11.	12% w/v Polyethylene Glycol 6000
12.	0.1 M Sodium Chloride	12.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	12.	18% v/v Polyethylene Glycol 400
13.	0.1 M Lithium Sulfate monohydrate	13.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	13.	12% w/v Polyethylene Glycol 4000
14.	0.1 M tri-Sodium Citrate dihydrate	14.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	14.	10% v/v Isopropanol
15.	0.1 M Sodium Chloride	15.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	15.	12% v/v 2-Methyl-2,4-pentanediol
16.	None	16.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	16.	1.0 M Magnesium Sulfate heptahydrate
17.	0.1 M Sodium Chloride	17.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	17.	12% w/v Polyethylene Glycol 4000
18.	0.1 M Lithium Sulfate monohydrate	18.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	18.	12% w/v Polyethylene Glycol 6000
19.	0.1 M Magnesium Chloride hexahydrate	19.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	19.	4% v/v 2-Methyl-2,4-pentanediol
20.	None	20.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	20.	0.1 M Sodium Chloride
21.	0.1 M Lithium Sulfate monohydrate	21.	0.1 M tri-Sodium Citrate dihydrate pH 5.6	21.	4% v/v Polyethylene Glycol 400
22.	None	22.	0.1 M n-(2-Acetamido)iminodiacetic Acid pH 6.5	22.	1.0 M Ammonium Sulfate
23.	0.1 M Lithium Sulfate monohydrate	23.	0.1 M n-(2-Acetamido)iminodiacetic Acid pH 6.5	23.	12% w/v Polyethylene Glycol 4000, 2% v/v Isopropanol
24.	None	24.	0.1 M n-(2-Acetamido)iminodiacetic Acid pH 6.5	24.	1.0 M di-Ammonium hydrogen Phosphate
25.	0.1 M Magnesium Chloride hexahydrate	25.	0.1 M n-(2-Acetamido)iminodiacetic Acid pH 6.5	25.	12% w/v Polyethylene Glycol 6000
26.	None	26.	0.1 M n-(2-Acetamido)iminodiacetic Acid pH 6.5	26.	12% v/v 2-Methyl-2,4-pentanediol
27.	0.1 M Lithium Sulfate monohydrate	27.	0.1 M n-(2-Acetamido)iminodiacetic Acid pH 6.5	27.	1.0 M Magnesium sulfate hydrate
28.	0.3 M Lithium Sulfate monohydrate	28.	0.1 M n-(2-Acetamido)iminodiacetic Acid pH 6.5	28.	4% v/v Polyethylene Glycol 400
29.	0.1 M Ammonium Sulfate	29.	0.1 M HEPES - Sodium pH 7.5	29.	0.5 M di-Sodium hydrogen Phosphate dihydrate 0.5 M di-Potassium hydrogen Phosphate
30.	0.1 M Sodium Chloride	30.	0.1 M HEPES - Sodium pH 7.5	30.	10% w/v Polyethylene Glycol 4000
31.	0.1 M Magnesium Chloride hexahydrate	31.	0.1 M HEPES - Sodium pH 7.5	31.	18% v/v Polyethylene Glycol 400
32.	None	32.	0.1 M HEPES - Sodium pH 7.5	32.	1.0 M Potassium Sodium Tartrate
33.	0.1 M Ammonium Sulfate	33.	0.1 M HEPES - Sodium pH 7.5	33.	18% v/v Polyethylene Glycol 400
34.	0.1 M Ammonium Sulfate	34.	0.1 M HEPES - Sodium pH 7.5	34.	10% w/v Polyethylene Glycol 4000
35.	0.1 M tri-Sodium Citrate dihydrate	35.	0.1 M HEPES - Sodium pH 7.5	35.	12% v/v 2-Methyl-2,4-pentanediol
36.	None	36.	0.1 M HEPES - Sodium pH 7.5	36.	1.0 M tri-Sodium Citrate dihydrate
37.	0.6 M Magnesium Sulfate hydrate	37.	0.1 M HEPES - Sodium pH 7.5	37.	4% v/v Polyethylene Glycol 400
38.	0.6 M Magnesium Sulfate hydrate	38.	0.1 M HEPES - Sodium pH 7.5	38.	4% v/v 2-Methyl-2,4-pentanediol
39.	0.1 M Lithium Sulfate monohydrate	39.	0.1 M HEPES - Sodium pH 7.5	39.	0.1 M Potassium Sodium Tartrate
40.	0.1 M Lithium Sulfate monohydrate	40.	0.1 M Tris Hydrochloride pH 8.5	40.	12% v/v 2-methyl-2,4-pentanediol
41.	0.1 M di-Ammonium hydrogen Phosphate	41.	0.1 M Tris Hydrochloride pH 8.5	41.	0.5 M di-Sodium hydrogen Phosphate dihydrate 0.5 M di-Potassium hydrogen Phosphate
42.	None	42.	0.1 M Tris Hydrochloride pH 8.5	42.	0.1 M Sodium Acetate trihydrate
43.	None	43.	0.1 M Tris Hydrochloride pH 8.5	43.	0.1 M Sodium Chloride
44.	0.1 M di-Ammonium hydrogen Phosphate	44.	0.1 M Tris Hydrochloride pH 8.5	44.	12% w/v Polyethylene Glycol 6000
45.	0.1 M Potassium Sodium Tartrate tetrahydrate	45.	0.1 M Tris Hydrochloride pH 8.5	45.	0.4 M Magnesium Sulfate hydrate
46.	None	46.	0.1 M Tris Hydrochloride pH 8.5	46.	0.2 M Lithium Sulfate monohydrate
47.	None	47.	0.1 M Tris Hydrochloride pH 8.5	47.	0.5 M Ammonium Sulfate
48.	0.1 M tri-Sodium Citrate dihydrate	48.	0.1 M Tris Hydrochloride pH 8.5	48.	5% v/v Polyethylene Glycol 400

† Buffer pH is that of a 1.0 M stock prior to dilution with other reagent components. pH with HCl or NaOH.

MembFac contains forty-eight unique reagents. To determine the formulation of each reagent, simply read across the page.