SHIMADZU Analytical and Measuring Instruments

Methods to Prepare Buffer Solutions

100 mM phosphoric acid (sodium) buffer solution (pH=2.1) Sodium dihydrogen phosphate dihydrate (M.W.=156.01)..50 mmol (7.8 g) Phosphoric acid (85 %, 14.7 mol/L).....50 mmol (3.4 mL) Add water to make up to 1 L.
10 mM phosphoric acid (sodium) buffer solution (pH=2.6) Sodium dihydrogen phosphate dihydrate (M.W.=156.01)..5 mmol (0.78 g) Phosphoric acid (85 %, 14.7 mol/L).....5 mmol (0.34 mL) Add water to make up to 1 L. (Alternatively, dilute 100 mM phosphoric acid (sodium) buffer solution (pH=2.1) ten times.)
50 mM phosphoric acid (sodium) buffer solution (pH=2.8) Sodium dihydrogen phosphate dihydrate (M.W.=156.01)..40 mmol (6.24 g) Phosphoric acid (85 %, 14.7 mol/L).....10 mmol (0.68 mL) Add water to make up to 1 L.
100 mM phosphoric acid (sodium) buffer solution (pH=6.8) Sodium dihydrogen phosphate dihydrate (M.W.=156.01)..50 mmol (7.8 g) Sodium dihydrogen phosphate 12-hydrate (M.W.=358.14)..50 mmol (17.9 g) Add water to make up to 1 L.
10 mM phosphoric acid (sodium) buffer solution (pH=6.9) Sodium dihydrogen phosphate dihydrate (M.W.=156.01)..5 mmol (0.78 g) Sodium dihydrogen phosphate 12-hydrate (M.W.=358.14)..5 mmol (1.79 g) Add water to make up to 1 L. (Alternatively, dilute 100 mM phosphoric acid (sodium) buffer solution (pH=6.8) ten times.)
20 mM citric acid (sodium) buffer solution (pH=3.1) Citrate dihydrate (M.W.=210.14).....16.7 mmol (3.51 g) Sodium citrate dihydrate (M.W.=294.10)..3.3 mmol (0.97 g) Add water to make up to 1 L.
20 mM citric acid (sodium) buffer solution (pH=4.6) Citrate dihydrate (M.W.=210.14).....10 mmol (2.1 g) Sodium citrate dihydrate (M.W.=294.10)..10 mmol (2.94 g) Add water to make up to 1 L.
10 mM tartaric acid (sodium) buffer solution (pH=2.9) Tartaric acid (M.W.=150.09).....7.5 mmol (1.13 g) Sodium tartrate dihydrate (M.W.=230.08).....2.5 mmol (0.58 g) Add water to make up to 1 L.
10 mM tartaric acid (sodium) buffer solution (pH=4.2) Tartaric acid (M.W.=150.09).....2.5 mmol (0.375 g) Sodium tart rate dihydrate (M.W.=230.08).....7.5 mmol (1.726 g) Add water to make up to 1 L.
20mM (acetic acid) ethanolamine buffer solution pH=9.6 Monoethanolamine (M.W.=61.87, d=1.017)...20 mmol (1.22 mL) Acetic acid (glacial acetic acid, 17.4 mol/L).....10 mmol (0.575 mL) Add water to make up to 1 L.
100 mM acetic acid (sodium) buffer solution (pH=4.7) Acetic acid (glacial acetic acid) (99.5 %, 17.4 mol/L).....50 mmol (2.87 mL) Sodium acetate trihydrate (M.W.=136.08).....50 mmol (6.80 g) Add water to make up to 1 L.
100 mM boric acid (potassium) buffer solution (pH=9.1) Boric acid (M.W.=61.83).....100 mmol (6.18 g) Potassium hydroxide (M.W.=56.11).....50 mmol (2.81 g) Add water to make up to 1 L.
100 mM boric acid (sodium) buffer solution (pH=9.1) Boric acid (M.W.=61.83).....100 mmol (6.18 g) Sodium hydroxide (M.W.=40.00).....50 mmol (2.00 g) Add water to make up to 1 L.

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