

Stock Solution



TD-S Revision 2.0

Creation Date: 8/17/2015
Revision Date: 10/21/2019

1M MOPS-Na Buffer - 1 L

Instructions

1. Dissolve 231.25 g of MOPS, Sodium Salt ([MOPS, Sodium Salt, GoldBio Catalog # M-791](#) [CAS 71119-22-7, mw. = 231.25]) in 750 mL of dH₂O.
2. Adjust to desired pH using concentrated HCl. Note: This method will produce about 0.24M – 0.88M NaCl in the concentrated stock solution.
3. Fill to final volume of 1 L with dH₂O.
4. Filter sterilize (recommended) or autoclave.
5. Store at 4°C.

Note: Alternatively, equimolar concentrations of MOPS sodium salt and MOPS free acid ([MOPS Free Acid, Ultra Pure, GoldBio Catalog # M-790](#) [CAS 1132-61-2, mw. = 209.26 g/mol]) can be mixed to attain a pH of ~ 7.2. The pH can be adjusted by increasing the molar ratio of MOPS free acid (more acidic) or MOPS sodium salt (more basic) and estimated using the Hendersen-Hasselbalch equation.

To make a 1 L solution of 1M MOPS, use the table below to estimate the required volume of acid for a given pH:

Starting pH: 10.32
Adjust pH with: conc. HCl

pH	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9
mL	73	70.5	68	66	63	59	55	51	47	42	37	32	28	24	20

Note: This data was collected in GoldBio labs using GoldBio reagents and calculated using 100 ml volumes. All reagent volumes recorded above were adjusted accordingly to create this protocol.

MOPS pKa at 25°: 7.14
MOPS pH range: 6.5 – 7.9
d(pKa)/dT value: -0.011