

# Stock Solution



TD-S Revision 2.0

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## 0.5M MES-Na Buffer - 1 L

### Instructions

1. Suspend 108.61 g of MES sodium salt ([MES, Sodium Salt, GoldBio Catalog # M-091](#) [CAS 71119-23-8, mw. = 217.22]) in 750 mL of dH<sub>2</sub>O.
2. Adjust to desired pH using concentrated HCl. This method will produce 0.12M -0.38M NaCl in the concentrated stock solution.
3. Fill to final volume of 1 L with dH<sub>2</sub>O.
4. Filter sterilize (recommended) or autoclave.
5. Store at 4°C.

**Note:** Alternatively, equimolar concentrations of MES sodium salt and MES free acid ([MES, Free Acid, GoldBio Catalog # M-095](#) [CAS 4432-31-9, mw. = 195.24 g/mol]) can be mixed to attain a pH of ~ 6.1. The pH can be adjusted by increasing the molar ratio of MES free acid (more acidic) or MES sodium salt (more basic) and estimated using the Hendersen-Hasselbalch equation.

To make a 1 L solution of 0.5M MES, use the table below to estimate the required volume of acid for a given pH:

Starting pH: 10.08  
Adjust pH with: conc. HCl

pH	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8
mL	32	31	30	29	28	26	24	22	20	18	16	14	12	10

**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.

MES pKa at 25°: 6.10  
MES pH range: 5.5 – 6.7  
d(pKa)/dT value: -0.011