

# Stock Solution



TD-S Revision 2.0

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## 0.5M MES Buffer - 1 L

### Instructions

1. Suspend 97.62 g of MES free acid ([MES, Free Acid, GoldBio Catalog # M-095](#) [CAS 4432-31-9, mw. = 195.24 g/mol]) in 750 mL of dH<sub>2</sub>O.
2. Adjust to desired pH using 10N NaOH.
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 free acid and MES sodium salt ([MES, Sodium Salt, GoldBio Catalog # M-091](#) [CAS 71119-23-8, mw. = 217.22]) 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 base for a given pH:

Starting pH: 3.23  
Adjust pH with: 10N NaOH

pH	5.5	5.6	5.7	5.8	5.9	6	6.1	6.2	6.3	6.4	6.5	6.6	6.7
mL	5	6.2	7.6	9.3	11.4	13.6	15.8	18.3	21.1	23.7	26.4	28.7	31.1

**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