How To Make 0.5M EDTA pH 8.0

About EDTA solution

Ethylenediaminetetraacetic acid (EDTA) solution, at 0.5 M pH 8.0, is a commonly used solution utilised as a ligand and chelating agent. EDTA is particularly useful at sequestering metal ions, such as Ca^{2+} and Mg^{2+}. Since nucleases require metal ions, EDTA solutions are used to protect DNA and RNA from degradation.

Recipe

The recipe below is used to prepare a 100 mL 0.5M EDTA pH 8.0 solution.

Reagent	Mass / Volume	Final concentration
EDTA disodium salt, dihydrate	18.61 g	0.5 M
Distilled H_2O	80 mL	

How to make 0.5M EDTA pH 8.0

1. Weigh out 18.61 g EDTA disodium salt, dihydrate and add to a 100 mL Duran bottle.
2. Measure out 80 mL distilled water and add to the Duran bottle.
3. Add a magnetic flea and place on a magnetic stirring plate to mix the solution. The EDTA salt will not go into solution until the pH reaches 8.0.
4. Add a pH meter into the solution to observe the pH.
5. To dissolve the salt, add sodium hydroxide (NaOH) pellets to the solution. Add a few pellets at a time and wait until the pellets have fully dissolved before adding more. It may take around 2 g of NaOH pellets before the pH is at 8.0.
6. Once fully dissolved (this will take some time so be patient), top up the solution to 100 mL using distilled water, if necessary.
7. To sterilise, autoclave the solution on a liquid cycle (20 min at 15 psi).

Storage of 0.5M EDTA pH 8.0 solution

Store 0.5M EDTA pH 8.0 solution at room temperature (+15^{o}C – +25^{o}C).

Safety

The final 0.5M EDTA pH 8.0 solution is not classified as hazardous. However, always be sure to read the safety data sheet before use.

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