# Recipe for 50x TAE buffer

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## Abstract

Stock solution for 50x TAE. TAE buffer is a solution made up of Tris base, acetic acid and EDTA (Tris-acetate-EDTA). It is a common buffer for DNA separation using standard agarose gel electrophoresis.

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## Materials

- EDTA by Contributed by users
- Acetic acid, glacial 537020 by Sigma Aldrich
- Tris (Tris Base) T-400 by Gold Biotechnology

## Protocol

### Components required

**Step 1.**

| Component | Molarity in 50x | Molecular weight |
|---|---|---|
| EDTA disodium salt | 50 mM | 372.24 g/mol |
| Tris | 2 M | 121.14 g/mol |
| glacial / acetic acid | 1 M | 60.05 |

### Preparation of a 0.5 M EDTA stock solution

**Step 2.**

For 500 ml:

- weigh out 93.05 grams of EDTA disodium salt (MW=372.24 g/mol)
- Dissolve in 400 milliliter deionized water and adjust the pH with solid sodium hydroxide (NaOH) plates, EDTA will not go completely into solution until the pH is adjusted to about 8.0!
- Top up the solution to a final volume of 500 milliliters
- autoclave

### Preparation of 50 x TAE buffer

**Step 3.**

- weigh out 242 grams of Tris-base (MW = 121.14 g/mol) and dissolve in approximately 700 milliliters of deionized water
- Carefully add 57.1 milliliters of 100 % glacial acid (or acetic acid) and 100 milliliters of 0.5 M EDTA (pH 8.0)
- adjust the solution to a final volume of 1 liter
- the pH of this buffer is not adjusted and should be about 8.5
- store stock solution at room temperature

## Preparation of 1 x TAE working solutuion

**Step 4.**

20 ml 50 x TAE

ad 1000 ml a. dest.

final concentration in gel / running buffer: 40 mM Tris, 20 mM acetic acid, 1 mM EDTA