

Protocol for Preparing 0.1M CaCl₂ (Calcium Chloride) Stock Solution

Materials:

- Calcium chloride dihydrate (CaCl₂·2H₂O) powder
 - Deionized water (DI water)
 - 1 L volumetric flask or beaker
 - Scale for weighing
 - Stirring rod or magnetic stirrer
 - 0.22 μm sterile syringe filter (optional for sterilization)
 - Sterile storage container (e.g., 50 mL conical tubes)
-

Steps:

1. **Weigh the calcium chloride:**
 - Measure **14.7 g** of **CaCl₂·2H₂O** using a clean, calibrated scale. This amount will make 1 liter of a 0.1M solution.
 2. **Dissolve in deionized water:**
 - Add the calcium chloride to a beaker or volumetric flask containing about 800 mL of deionized water.
 - Stir the solution using a stirring rod or magnetic stirrer until the calcium chloride is fully dissolved.
 3. **Adjust to final volume:**
 - After the calcium chloride has dissolved, add deionized water to bring the final volume to **1 liter**.
 4. **Sterilize the solution (optional but recommended):**
 - If sterility is required, filter the solution through a **0.22 μm sterile filter** into a sterile container.
 5. **Aliquot and store:**
 - Transfer the solution into sterile containers (e.g., 50 mL conical tubes) or smaller aliquots if necessary.
 - Label with "0.1M CaCl₂," the date, and your initials.
 - Store at **4°C**.
-

Note:

- **0.1M CaCl₂** is often used for preparing competent bacterial cells, as calcium ions help cells take up DNA during transformation.