

Preparation of Liquid Media from Dry Powder

Powder medium allows the flexibility to make as little or as much liquid as needed. Storing powder media is simple due to its compact size.

All cellgro[®] powdered media are deficient of sodium bicarbonate, because it tends to absorb moisture and clump. If a sodium bicarbonate buffering system is desired, it must be added during liquid preparation. Antibiotics, serum, and media supplements may be added immediately before use.

The following procedure is recommended for preparing synthetic medium from a dry powder.

Procedure

1. Inspect the powder to ensure it is free flowing and there are no clumps or caking present. Caking is indicative of moisture uptake and may compromise the stability of the medium.
2. Use water equilibrated to room temperature, 15-30°C. Do not heat the water prior to use. Measure 10% less distilled water than the final volume specified on the label, and pour into a mixing vessel.
3. Stirring vigorously, add the powder slowly to the water and continue stirring. Never add water to the powder, as clumping occurs. Rinse the inside of the media container with distilled water to ensure that all of the powder has been added to the water.
4. Add the amount of sodium bicarbonate as specified in the formulation, or refer to the Sodium Bicarbonate Addition Chart.
5. Stop stirring once the powder is completely dissolved. Over-mixing promotes the loss of bicarbonate through CO₂ disposition.
6. Add distilled water to within 1% of the specific final volume.
7. Regional variations in the quality of the water used may make it necessary to adjust the pH of the medium with 1 NaOH or 1 N HCl to completely dissolve all components. Add the acid or base slowly while continuously stirring and equilibrate the solution before each pH reading. Note that the pH will rise during filtration, so adjust the pH approximately 0.2 units less than the desired final pH. This precaution is unnecessary if HEPES or other organic buffer is present in the formulation.
8. Cease stirring to add distilled water up to the specified final volume.
9. Sterilize by filtration through a 0.22 micron filter.
10. Dispense aseptically into sterile containers with a total volume capacity approximately 15-20% larger than the fill volume. This will allow for supplementation while limiting the amount of gas space in the container to prevent pH rise.
11. Store at 2-8°C. To ensure sterility of the medium, a sterility test prior to use is recommended.

Note: Reconstituted RPMI 1640 may appear cloudy after adding sodium bicarbonate. This cloudiness is due to interactions with phosphate and will clear as the pH is adjusted.

Product Description	Catalog No.	Size
Sodium Bicarbonate, 7.5% (w/v) Solution	25-035-CI	6 x 100 mL
Sodium Bicarbonate, Powder	61-065-RO	1 x 500 g
	61-065-RR	1 x 1 kg
WFI - Quality Distilled, Deionized Water	25-055-CI	6 x 100 mL
	25-055-CV	6 x 500 mL
	25-055-CM	6 x 1 L
	25-055-LB	20 L
	25-055-LG	100 L
	25-055-LH	200 L