



## Media Preparation From Powdered Media

Powdered media are extremely hygroscopic and must be protected from atmospheric moisture. If possible the entire contents of each package should be used immediately after opening. Preparing the medium in a concentrated form is not recommended as some salt added to the medium may affect shelf life and storage conditions. The basic steps for preparing the culture medium are listed below:

1. Measure out approximately 90% of the final required volume of tissue culture grade water, e.g. 900 ml for a final volume of 1000 ml. Select a container twice the size of the final volume.
2. While stirring the water add the powdered medium and stir until completely dissolved.
3. Rinse the original container with a small volume of tissue culture grade water to remove traces of the powder. Add to the solution in Step 2.
4. Add desired heat stable supplements (e.g. sucrose, gelling agent, vitamins, auxins, cytokinins, etc.)
5. Add additional tissue culture grade water to bring the medium to the final volume.
6. While stirring, adjust medium to desired pH using NaOH, HCl, or KOH.
7. If a gelling agent is used, heat until the solution is clear.
8. Dispense the medium into the culture vessels before (or after) autoclaving according to your application. Add heat labile constituents after autoclaving.
9. Sterilize the medium in a validated autoclave at 1 kg/cm<sup>2</sup> (15 psi), 121°C, for the time period described under Sterilization of Media.
10. Allow medium to cool prior to use.                      \*Heating may be required to bring powders into solution.

**POWDERED MEDIA AND BASAL SALT MIXTURES ARE FOR LABORATORY USE ONLY.  
NOT FOR DRUGS, HOUSEHOLD OR OTHER USES.**

**PhytoTechnology Laboratories, Inc.**

P.O. Box 13481; Shawnee Mission, KS 66282-3481

Phone: 1-888-749-8682 or 913-341-5343; Fax: 1-888-449-8682 or 913-341-5442

Web Site: [www.phytotechlab.com](http://www.phytotechlab.com)

© 2005 PhytoTechnology Laboratories, Inc.



## **MATERIALS NOT PROVIDED**

Deionized tissue culture grade water

1 N Hydrochloric Acid (HCl) (Product No. H 245)

1 N Sodium Hydroxide (NaOH) (Product No. S 835)

1 N Potassium Hydroxide (KOH) (Product No. P 682)

Auxins, cytokinins, carbohydrates, gelling agents, and other supplements listed in the Biochemical's section.

## **STORAGE**

Store dry medium in at 0-5°C. Deterioration of powdered medium may be recognized by: 1) color variations; 2) granulation, clumping, or particulate matter throughout the powder; 3) insolubility; 4) pH change; or 5) inability to promote growth when properly used.

## **PRECIPITATION IN PLANT TISSUE CULTURE POWDERED MEDIA**

Precipitates are known to occur, with time, in plant tissue culture media. The precipitates have been analyzed; (Dalton, *et al.* 1983). They are composed of small, pale yellow-white particles. Analysis of precipitates indicated a predominance of iron, phosphate, and zinc. The probable cause of the precipitates is the inevitable oxidation of ferrous ions. When the solubility of ferric phosphate occurs. There are no reports of detrimental effects on growth and development in plant tissue culture due to the precipitates.

**See Also: *Media usage charts and formulas***