Murashige and Skoog Basal Medium

Catalog Number **MF424**
Storage Temperature 2–8 °C

Product Description
Classic plant cell culture medium containing macro and micronutrients, and vitamins.[1]

Components	**mg/L**
Ammonium nitrate	1,650.0
Boric acid	6.20
Calcium chloride (anhydrous)	332.20
Cobalt chloride hexahydrate	0.0250
Cupric sulfate pentahydrate	0.0250
Disodium EDTA dihydrate	37.260
Ferrous sulfate heptahydrate	27.80
Glycine	2.0
Magnesium sulfate (anhydrous)	180.70
Manganese sulfate monohydrate	16.90
myo-Inositol	100.0
Nicotinic acid	0.50
Potassium iodide	0.830
Potassium nitrate	1,900.0
Potassium phosphate monobasic	170.0
Pyridoxine hydrochloride	0.50
Sodium molybdate dihydrate	0.250
Thiamine hydrochloride	0.10
Zinc sulfate heptahydrate	8.60

4.4 g of powder are required to prepare 1 L of medium.

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Do not open the container until the contents are allowed to warm to room temperature. If possible the entire contents of the package should be used immediately after opening. Preparing this product in a concentrated form is not recommended as some salt complexes may precipitate. Supplements may be added prior to sterilization or added aseptically to the sterile medium. Certain supplements (i.e., heat labile) may require filter sterilization and may affect the shelf life of the medium.

The basic steps for preparing culture medium are the following:

1. Using a container twice the size of the desired final volume, measure out ~90% of the required final volume of tissue culture grade water (e.g., Catalog Number MF160). Example: 900 ml for a final volume of 1000 ml.
2. While stirring, add the powdered product.
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 supplements (e.g., sucrose, gelling agent, auxins, cytokinins).
5. While stirring, adjust to the desired pH (e.g., 5.7±0.1) using KOH, NaOH, or HCl.
6. Add additional tissue culture grade water to bring the medium to the final volume.
7. If a gelling agent is used heat the solution to clarity while stirring.
8. Dispense the medium into culture vessels before or after autoclaving according to the application. Add heat labile constituents after autoclaving.
9. Sterilize the medium in a validated autoclave at 1 kg/cm^2 (15 psi). The medium should attain a temperature of 121 °C for at least 15 minutes.

Storage/Stability
All media preparations should be stored at 2–8 °C. Store dry powder in a desiccator as the powder is extremely hygroscopic and must be protected from atmospheric moisture. Deterioration of powdered medium may be recognized by:

1. color change
2. granulation, clumping, or particulate matter throughout the powder
3. insolubility
4. pH change
5. inability to promote growth when properly used.

References
1. Murashige, T., and Skoog, F., Physiol. Plant, **15**, 473-497 (1962).