SIGMA CHEMICAL COMPANY

MURASHIGE AND SKOOG BASAL MEDIUM
Product No. M5519

This powder is extremely hygroscopic and must be protected from atmospheric moisture. Do not open the container until its contents are allowed to warm to room temperature. If possible the entire contents of the package should be used immediately after opening.

Components:	mg/L
Ammonium Nitrate	1650.0
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 (Free Base)	2.0
Magnesium Sulfate Anhydrous	180.70
Manganese Sulfate Monohydrate	16.90
Myo-Inositol	100.0
Nicotinic Acid (Free Acid)	0.50
Potassium Iodide	0.830
Potassium Nitrate	1900.0
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.

THIS PRODUCT IS INTENDED FOR LABORATORY USE ONLY.
NOT FOR DRUG, HOUSEHOLD, OR OTHER USES.

PREPARATION: 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 a 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 approximately 90% of the final required volume of tissue culture grade water (e.g. Sigma Product No. W-3500). 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 your application. Add heat labile constituents after autoclaving.
9. Sterilize the medium in a validated autoclave at 1Kg/cm^2 (15 psi). The medium should attain a temperature of 121^o C for at least 15 min. Refer to the Sigma Plant Cell Culture Catalog for recommended autoclave times for different volumes.

STORAGE: All media preparations should be stored at 0-5^o C. Store dry powder in a desiccator. 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; or 5) inability to promote growth when properly used.

The following information can be obtained from the Sigma Plant Cell Culture Catalog or by calling ext. 3952 at 1-800-521-8956 (USA) or 314-771-5765 (collect):

Manufacturing and testing specifications
Physical and chemical analysis
Biological performance testing

SPECIFICATIONS: Appearance: Light yellow with light tan cast
Moisture content: < 5%
Solubility: Clear solution with faint yellow cast
Warming solution may be required.
pH +/- 0.5 at RT before adjustment: 3.9