

Technical Information

De Greef & Jacobs Macroelements

Product Code: TS2048

Application: De Greef & Jacobs macroelements has been specially formulated for plant cell, tissue and organ cultures. Potassium nitrate and ammonium nitrate serves as the sources of nitrate.

Composition**

Ingredients	mg/Litre
Potassium nitrate	2000.000
Ammonium sulphate	400.00
Calcium chloride.2H ₂ O	300.00
Magnesium sulphate	244.17
Sodium phosphate monobasic	250.00
Potassium chloride	600.00
TOTAL gm/litre	3.79

Methodology

Suspend 3.72 grams of dehydrated macroelements powder[#] in 600ml of distilled water and rinse media vial with small quantity of distilled water to remove traces of powder. Apply constant gentle stirring to the solution till the powder dissolves completely. Add desired heat stable supplements prior to autoclaving. Adjust the medium to the desired pH using 1N HCl/NaOH. Make up the final volume to 1000ml with distilled water. Sterilize the medium by autoclaving at 15 lbs or 121°C for 15 minutes. Cool the autoclaved medium to 45°C before adding the filter sterilized heat labile supplements. Dispense the desired amount of medium aseptically in sterile culture vessels.

[#] Weight after vacuum drying to remove all water.

Quality Control

Appearance

White to off white, homogeneous, free flowing powder.

Solubility

3.72 gm/litre soluble in distilled water.

Colour and clarity

Colourless to light yellow, clear solution

pH at 25°C:

4.9 ±0.5 of 0.372% w/v dehydrated macroelements powder.

Cultural Response

Cultural condition :

Incubation period : 5 weeks
 Relative humidity : 60% ± 2%
 Temperature : 22°C ± 2°C
 Photoperiod (D:N) in hours : 16:8

Cell Line	Type of Culture	Results
<i>Musa</i> species	Shoot culture	No structural deformity observed No necrotic tissues, Actively growing shoots, No toxicity to shoots
<i>Daucus</i> species	Callus culture	No necrotic tissues, Actively growing callus, No toxicity to callus

The medium is prepared as per direction. The growth promoting activity of this vitamin mixture is evaluated using two plant species viz. *Musa* species and *Daucus* species through three passages. Plant growth hormones (e.g. 2,4-D, NAA, Kinetin and 6-BAP) are added in suitable combinations and concentrations.]

Storage and Shelf Life

Dehydrated microelements powder is extremely hygroscopic and should be protected from atmospheric moisture. If possible, the entire content of each bottle should be used immediately after opening or else the unused portion should be stored in a desiccator and refrigerated at 2- 8°C. Use before the expiry date.

Reference

- De Greef W. & Jacobs M., Plant Sci. Lett., (1979), 17, 55 - 61

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conforms solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at CDH is true and accurate.
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