

White Macroelements Solution (10X)

PL015

Composition :

Ingredients	milligrams/100ml
Potassium nitrate	80.00
Calcium nitrate	208.45
Magnesium sulphate	366.26
Sodium phosphate monobasic	16.51
Potassium chloride	65.00
Sodium sulphate	200.00
TOTAL gm/100ml	0.94

Directions :

Measure out approximately 600ml of distilled water. While stirring add 100ml of macroelements stock solution. Rinse the original bottle with a small volume of distilled water to remove traces of the solution. 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 in sterile culture vessels.

Principle and Interpretation :

White macroelements (10X) is a filter sterilized stock solution. The stock contains macroelements as described by White. Potassium nitrate and calcium nitrate are the major nitrate sources. Add 100ml per litre of macroelements stock solution to the prepared medium to achieve the desired concentration.

Quality Control :

Appearance	: Colourless to light yellow, clear solution.
pH	: 4.7 ±0.5 of 100ml of macroelements stock solution.
Sterility	: No bacterial or fungal growth is observed after 14 days of incubation, as per USP specification.

Cultural Response :

Cultural condition :

- Incubation period : 5 weeks
- Relative humidity : 60% \pm 2%
- Temperature : 22°C \pm 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 macroelements stock solution 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 :

Store the macroelements stock solution at 2-8°C away from direct light. If possible, the entire content of each bottle should be used immediately, aseptically after opening or else the unused portion should be stored at 2-8°C. Avoid contaminating the liquid. Use before the expiry date.

Reference :

1. White P.R., (1963), The cultivation of Animal & Plant Cells, 2nd edition, Ronald Press, New York.

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