

Heller Microelements (100X)

TS1035

Composition :

Ingredients	milligrams/litre
Manganese sulphate.H ₂ O	0.08
Boric acid	1.00
Potassium iodide	0.01
Zinc sulphate.7H ₂ O	1.00
Copper sulphate.5H ₂ O	0.03
Aluminium chloride.6H ₂ O	0.05
Nickel chloride.6H ₂ O	0.03
Ferric chloride.6H ₂ O	1.00
TOTAL gm/litre	0.003

Directions :

Suspend 0.002 grams of dehydrated microelements powder[#] in 600ml of distilled water. 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

Principle and Interpretation :

Heller microelements (100X) powder has been specially formulated for plant cell, tissue and organ cultures. The powder contains inorganic microelements and iron source. The vial contains 0.23 grams of dehydrated microelements that is sufficient for making 100 litres of complete medium.

Quality Control :

Appearance	: Yellow to greenish yellow, homogeneous, free flowing powder.
Solubility	: 0.23 gm/litre soluble in distilled water.
Colour and Clarity	: Light yellow to yellow, clear solution.
pH at 25°C	: 4.3 ±0.5 of 0.023% w/v dehydrated microelements 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 dehydrated microelements 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 :

1. Heller R., Ann. Sci. Nat. Bot. Biol. Veg. 11th Ser., (1953), 14, 1 - 223

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.