

## Orchid Maintenance Medium

With Calcium Chloride, Vitamins, Sucrose, HiVeg™peptone, MES, Activated charcoal and Agar

**Product Code: PT072**

### Product Description :

Orchid Maintenance Medium has been formulated for the effective maintenance of the orchid species.

It is a nutrient blend of inorganic salts, vitamins and carbohydrate. In addition, it is supplemented with MES buffer which maintains optimum buffering and prevents acidification in the media required for the cultivation of orchids. HiVeg™ peptone is added as an additional source of reduced organic nitrogen. Microelements like Boron, Manganese, Molybdenum, Copper, Iron and Zinc enhance metabolism in the plants. Boron plays a key role in carbohydrate metabolism. Thiamine, pyridoxine, nicotinic acid act as enzymatic cofactors in the universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants. Activated charcoal adsorbs the inhibitory leachouts in the medium.

The product is plant tissue culture tested but it is the sole responsibility of the user to ensure the suitability of the medium for individual species.

### Composition :

Ingredients	mg/L
<b>MACROELEMENTS</b>	
Ammonium nitrate	825.000
Calcium chloride	166.100
Magnesium sulphate	90.340
Potassium nitrate	950.000
Potassium phosphate monobasic	85.000
<b>MICROELEMENTS</b>	
Boric acid	3.100
Cobalt chloride hexahydrate	0.013
Copper sulphate pentahydrate	0.013
EDTA disodium salt dihydrate	37.300
Ferrous sulphate heptahydrate	27.800
Manganese sulphate monohydrate	8.450
Molybdic acid (sodium salt)	0.106
Potassium Iodide	0.420
Zinc sulphate heptahydrate	5.300
<b>VITAMINS</b>	
myo-Inositol	100.000

Nicotinic acid (free acid)	1.000
Pyridoxine HCl	1.000
Thiamine hydrochloride	10.000
<b>CARBOHYDRATE</b>	
Sucrose	20000.000
<b>GELLING AGENT</b>	
Agar	8000.000
<b>OTHERS</b>	
Activated charcoal	2000.000
HiVeg™Peptone	2000.000
MES	1000.000
<b>Total(gms/litre)</b>	<b>35.3</b>

### Material required but not provided :

- Autoclaved distilled water
- Plant growth regulators
- 1N NaOH/HCl

### Precautions :

- Ensure appropriate pH of the medium before addition of gelling agent as acidic pH will lead to decreased gelation resulting in semi solid flowing gel while alkaline pH will lead to formation of hardened gel.
- Use of Distilled water / Tissue culture grade water is recommended for media preparation as tap water or lower grade water may lead to salt precipitation and improper gelation.
- Avoid preparation of concentrated solutions, as it will lead to precipitation of salts.

### Directions :

- Reconstitute medium by adding required quantity of powder in two-third of total volume with constant, gentle stirring till the medium gets completely dissolved.
- Add heat stable supplements prior to autoclaving.
- Make up the final volume with distilled water.
- Adjust the pH of the medium to  $5.75 \pm 0.5$  using 1N NaOH/HCl.
- Heat the medium to boiling till complete dissolution of gelling agent.

- Sterilize the medium by autoclaving at 15 lbs and 121°C for 15 min.
- Cool the autoclaved medium to about 45°C before adding heat labile supplements.
- Aseptically dispense the desired amount of medium under a laminar airflow unit in sterile culture vessels.

## **Quality Control:**

### **Appearance**

Grey to black, homogenous, free flowing powder

### **Solubility**

35.3 gms/litre soluble after boiling in distilled water

### **Colour and Clarity**

Grey to black solution, opaque gel is formed on cooling

### **Gelling**

Firm gel formed at pH :  $5.75 \pm 0.5$

### **pH at 25°C**

4.80 - 5.80

### **Plant Tissue Culture Test**

The growth promoting properties of medium is assessed by providing plant cultures with relative humidity of about  $60\% \pm 2\%$ , temperature  $22^\circ\text{C} \pm 2^\circ\text{C}$  and photoperiod of about 16:8. The plant species showed actively growing callus and shoots with no structural, necrotic and toxic deformity.

## **Storage and Shelf Life:**

- The plant tissue culture medium powder is extremely hygroscopic and must be stored at 2-8°C in air tight containers.
- Preferably, entire content of each package should be used immediately after opening.
- Use before the expiry date.

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### **Disclaimer :**

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