

Technical Information

Woody Plant Medium

With Calcium Chloride, Vitamins, Sucrose And Without Agar

Product Code: PT1105

Application: Woody Plant Medium was originally formulated by Lloyd and McCown in 1981 for the culturing of shoot tips of Mountain Laurel (*Kalmia latifolia*). Since then, it is widely used for the propagation of many woody plant species. The formulation is a nutrient blend of inorganic salts, vitamins, amino acid and carbohydrate.

Woody Plant Medium (WPM) provides all the essential macroelements and microelements. Potassium dihydrogen phosphate serves as a source of phosphate while calcium nitrate provides nitrogen to the plant. Microelements like Boron, Manganese, Iron, Molybdenum and Zinc play a vital role in the plant metabolism. Boron plays a key role in carbohydrate metabolism. Thiamine, pyridoxine, nicotinic acid acts as enzymatic cofactors in universal pathways including glycolysis and TCA cycle along with the primary and secondary metabolism in the plants. Glycine serves as a source of amino acid.

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/Litre
MACROELEMENTS	
Ammonium nitrate	400.000
Calcium chloride	72.500
Calcium nitrate monohydrate	386.340
Magnesium sulphate	180.690
Potassium phosphate monobasic	170.000
Potassium sulphate	990.000
MICROELEMENTS	
Boric acid	6.200
Copper sulphate pentahydrate	0.025
EDTA disodium salt dihydrate	37.300
Ferrous sulphate heptahydrate	27.800
Manganese sulphate monohydrate	22.300
Molybdic acid (sodium salt)	0.213
Zinc sulphate heptahydrate	8.600
VITAMINS	
myo-Inositol	100.000
Nicotinic acid (free acid)	0.500
Pyridoxine HCl	0.500
Thiamine hydrochloride	1.000
AMINO ACID	
Glycine	2.000
CARBOHYDRATE	
Sucrose	20000.000
Total (gms/litre)	22.4

Material required but not provided

- Autoclaved distilled water
- Plant growth regulators
- 1N NaOH/HCl
- Gelling agents like Agar (PCT1901) or CleriGel (PCT1903)

Quality Control

Appearance

White to off-white, homogenous, free flowing powder

Solubility

22.4 gms/litre soluble in distilled water

Colour and Clarity

Colourless to light yellow, clear solution

pH at 25°C

3.30 - 4.30

Plant Tissue Culture Test

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

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 sucrose and heat stable supplements prior to autoclaving.
- Make up the final volume with distilled water.
- Adjust the pH of the medium to 5.75 ± 0.5 using 1N NaOH/HCl.
- Add gelling agent and 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

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.

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.

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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