

## Murashige and Skoog (MS) Medium w/ Vitamins

**Description:** Powder, with macronutrients, micronutrients and vitamins, (Murashige & Skoog, 1962).

Micronutrients	mg/L
Boric acid	6.2
Cobalt Chloride.6H <sub>2</sub> O	0.025
Cupric Sulfate. 5H <sub>2</sub> O	0.025
Manganese Sulfate H <sub>2</sub> O	16.9
Potassium Iodide	0.83
Sodium Molybdate 2H <sub>2</sub> O	0.25
Zinc Sulfate 7H <sub>2</sub> O	8.6
FeSO <sub>4</sub> .7H <sub>2</sub> O	27.8
Na <sub>2</sub> EDTA.2H <sub>2</sub> O	37.26
Macronutrients	
Calcium Chloride, anhydrous	332.2
Ammonium Nitrate	1650
Magnesium Sulfate, anhydrous	180.7
Potassium Nitrate	1900
Potassium Phosphate Monobasic	170
Vitamins	
Glycine	2
Myo Inositol	100
Nicotinic acid	0.5
Pyridoxine HCl	0.5
Thiamine HCl	0.1

**Working Conc. (g/L):** 4.43g

**pH:** 3.5 – 4.5

**Instruction to use:** Mix 4.43 grams per 1 liter of water. Heat with frequent agitation until dissolved. Autoclave at 121°C for 15 minutes and let it cool.

