

PMS-10 (photosynthetic medium)

<u>Per liter of PM add:</u>	<u>Stock solutions</u>
926ml	deionized water
25 ml	0.5 M Na ₂ HPO ₄
25 ml	0.5 M KH ₂ PO ₄
10 ml	10% (NH ₄) ₂ SO ₄
1 ml	Concentrated base (trace metals solution)
1 ml	0.1 M Na thiosulfate
1 ml	2 mg/ml stock p-aminobenzoic acid (filter sterilized)
10ml	1.0 M sodium succinate
1 mL	20 mg/L NiCl ₂ .6H ₂ O

pH should be around 6.8 - 7.0. For nitrogen fixing growth 10% (NH₄)₂SO₄ is replaced with 10% Sodium sulfate. Autoclave

The formulation of the mineral base begins with the preparation of the trace element solution called Hutner's 'metal 44'. Dissolve the following in order given. Do not add components until the previous one has completely dissolved.

In 800 ml distilled water dissolve:

EDTA (free acid, not sodium salt, warm to dissolve)	2.5 g
ZnSO ₄ .7H ₂ O	10.95 g
FeSO ₄ .7H ₂ O	5.0 g
MnSO ₄ .H ₂ O	1.54 g
CuSO ₄ .5H ₂ O	392 mg
Co(NO ₃) ₂ .6H ₂ O	250 mg
Na ₂ B ₄ O ₇ .10H ₂ O	177 mg

Add a few drops conc. H₂SO₄ to retard precipitation. Made to a final volume of 1 (one) liter, it should be a clear, lime green solution. Protect from light by wrapping bottle with Al foil.

Concentrated base; per liter

Nitrilotriacetic acid (NTA-free acid)	20 g
MgSO ₄ anhydrous	28.9 g
CaCl ₂ .2H ₂ O	6.67 g
(NH ₄) ₆ Mo ₇ O ₂₄ .4H ₂ O	18.5 mg
FeSO ₄ .7H ₂ O	198 mg
'metal 44'	100 ml

Dissolve NTA separately in 600 ml water and neutralize with KOH (14.6 g KOH); add other components and dissolve in order given. Adjust to pH 6.8 before making to final volume of 1 liter. A precipitate forms when adjusting the pH from the acid side of 6.8 with KOH (need about 100 ml of 1M KOH), but eventually will redissolve with stirring. When the pH is near 6.8, the color of the solution changes from a deep yellow to straw color. Store at 4°C.