



MJ Medium

Modified Jorgensen's media for Diatoms

Based on recipe obtained from University of Tasmania – Harmful Algae Culture Collection. This media has been used predominantly for the culture of *Pseudonitzschia* species and in trials of some *Chaetoceros* species where biomass and maintenance of normal morphology seems to be better than in other media. Preparation of the media is based on the utilization of MJ and f-stock solutions.

STOCK SOLUTIONS	CONCENTRATION: g L ⁻¹ DEIONISED WATER (dH ₂ O)	VOLUME FOR MEDIUM	VOLUME FOR CONCENTRATED NUTRIENT STOCK
1. NaNO ₃	150 g	2.0 mL	20.0 mL
2. K ₂ HPO ₄	2.0 g	5.0 mL	50.0 mL
3. Trace Metals I	<i>see recipe below</i>	0.1 mL	1.0 mL
4. Trace Metals II	<i>see recipe below</i>	1.0 mL	10.0 mL
5. Vitamin B ₁₂	1.0 mg	0.5 mL	5.0 mL
6. Na ₂ SiO ₃ ·5H ₂ O	22.7 g	0.5 mL	5.0 mL
7. EDTA	10 g	4.5 mL	45.0 mL

Autoclave each stock solution except the Vitamin B₁₂ which should be 0.22 µm filter sterilised.

Store all stock solutions in the refrigerator.

Trace Metals I solution

Add the Na₂EDTA to ~750 mL of dH₂O and stir over low heat to dissolve. Add each of the other constituents separately to ~200 mL of dH₂O and fully dissolve between additions. Combine solutions and make up to 1 L.

CONSTITUENT	QUANTITY
Na ₂ EDTA·2H ₂ O	2.5 g
CoCl ₂ ·6H ₂ O	0.15 g
CuSO ₄ ·5H ₂ O	0.80 g
(NH ₄) ₆ Mo ₇ O ₂₄	0.15 g
NH ₄ VO ₃	0.25 g
ZnSO ₄ ·7H ₂ O	0.25 g

Trace Metals II solution

Make up each constituent separately in ~200 mL of dH₂O and fully dissolve. Combine each solution and make up to 1 L.

CONSTITUENT	QUANTITY
FeSO ₄ ·7H ₂ O	3.0 g
Citric acid	3.0 g
H ₃ BO ₃	1.5 g
MnCl ₂ ·4H ₂ O	1.0 g

1. To prepare MJ Medium (1 L)

- Add aseptically each stock solution (1 – 7) in the Standard quantities to 1 L sterile seawater (0.22µm filtered).

2. To prepare MJ concentrated nutrients

- Add aseptically each of the stock solutions (1 – 7) in the Concentrated quantities to 59 mL of sterile dH₂O in a 200 mL Schott bottle (making total volume 200 mL).

Use 2 mL per 100 mL sterile seawater adding the correct amount of nutrients aseptically

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