

ATCC Medium: 2744 F/2-Si

F2 Medium:

- NaNO₃.....1.0mL
- NaH₂PO₄ x H₂O.....1.0mL
- *Na₂SiO₃ x 9H₂O (if required-see note).1.0mL
- *Carolina Biological Seawater Cat.163390 (filtered and processed according to instruction below).....950.0mL

To prepare, begin with 950mL of filtered seawater and add the stock solutions as listed above. Bring final solution to 1 liter. Autoclave at 121°C.

****Filtration of Seawater:**

To each liter of natural seawater add 5.0 g of activated charcoal, shake and leave overnight. Filter through Whatman 934-HA glass fiber filter. Treatment with the carbon will remove potentially toxic organic contaminants

****Note: If the alga to be grown does not require Silica, then it is recommended that the Silica be omitted because it enhances precipitation.**

Aseptically add:

- Trace Mineral solution (see below).....1.0mL
 - Vitamin Solution (see below).....0.5mL
- Aseptically dispense into desired vessels.

Stock solutions:

Component	Stock Solution	Quantity	Molar Concentration in Final Medium
NaNO ₃	75 g/L dH ₂ O	1 mL	8.82 x 10 ⁻⁴ M
NaH ₂ PO ₄ H ₂ O	5 g/L dH ₂ O	1 mL	3.62 x 10 ⁻⁵ M
Na ₂ SiO ₃ 9H ₂ O	30 g/L dH ₂ O	1 mL	1.06 x 10 ⁻⁴ M
Trace metal solution	(see recipe below)	1 mL	---

Vitamin solution	(see recipe below)	0.5 mL	---
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F/2 Trace Metal Solution

Component	Primary Stock Solution	Quantity	Molar Concentration in Final Medium
FeCl ₃ 6H ₂ O	---	3.15 g	1.17 x 10 ⁻⁵ M
Na ₂ EDTA 2H ₂ O	---	4.36 g	1.17 x 10 ⁻⁵ M
CuSO ₄ 5H ₂ O	9.8 g/L dH ₂ O	1 mL	3.93 x 10 ⁻⁸ M
Na ₂ MoO ₄ 2H ₂ O	6.3 g/L dH ₂ O	1 mL	2.60 x 10 ⁻⁸ M
ZnSO ₄ 7H ₂ O	22.0 g/L dH ₂ O	1 mL	7.65 x 10 ⁻⁸ M
CoCl ₂ 6H ₂ O	10.0 g/L dH ₂ O	1 mL	4.20 x 10 ⁻⁸ M
MnCl ₂ 4H ₂ O	180.0 g/L dH ₂ O	1 mL	9.10 x 10 ⁻⁷ M

To prepare, begin with 950 mL of dH₂O, add the components and bring final volume to 1 liter with dH₂O. Filter Sterilize. Store stock solutions in refrigerator or freezer.

****Note that the original medium (Guillard and Ryther 1962) used ferric sequestrone; we have substituted Na₂EDTA · 2H₂O and FeCl₃ · 6 H₂O.**

F/2 Vitamin Solution:

Component	Primary Stock Solution	Quantity	Molar Concentration in Final Medium
thiamine HCl (vit. B ₁)	---	200 mg	2.96×10^{-7} M
biotin (vit. H)	1.0 g/L dH ₂ O	1 mL	2.05×10^{-9} M
cyanocobalamin (vit. B ₁₂)	1.0 g/L dH ₂ O	1 mL	3.69×10^{-10} M

To prepare final vitamin solution, begin with 950 mL of dH₂O, dissolve the thiamine (200mg), add 1 mL (each) of the primary stocks and bring final volume to 1 liter with dH₂O. Filter Sterilize. Store stock solutions in refrigerator or freezer