

## f/2 Medium

### Stocks

(1) NaNO <sub>3</sub>	per 200 ml	15 g
(2) NaH <sub>2</sub> PO <sub>4</sub> .2H <sub>2</sub> O		1.13 g
(3) Trace elements (x10 concentration):	per 200 ml	
Na <sub>2</sub> EDTA		8.32 g
FeCl <sub>3</sub> .6H <sub>2</sub> O		6.30 g
CuSO <sub>4</sub> .5H <sub>2</sub> O		0.02 g
ZnSO <sub>4</sub> .7H <sub>2</sub> O		0.044 g
CoCl <sub>2</sub> .6H <sub>2</sub> O		0.02 g
MnCl <sub>2</sub> .4H <sub>2</sub> O		0.36 g
Na <sub>2</sub> MoO <sub>4</sub> .2H <sub>2</sub> O		0.012 g
(4) Vitamin mix:	per litre	
Cyanocobalamin (Vitamin B <sub>12</sub> )		0.0005 g
Biotin		0.0005 g
Thiamine HCl (Vitamin B <sub>1</sub> )		0.1g

For ease of measuring, first prepare primary stock solutions and divide into 1ml aliquots to be frozen for later use.

Component	Primary Stock solution	Quantity	Molar Concentration in final medium
Thiamine HCl (B <sub>1</sub> )	-	100mg	$2.96 \times 10^{-7}$
Biotin	0.1g L <sup>-1</sup> dH <sub>2</sub> O	5ml	$2.05 \times 10^{-9}$
Cyanocobalamin (B <sub>12</sub> )	0.1g L <sup>-1</sup> dH <sub>2</sub> O	5ml	$3.69 \times 10^{-10}$

### Medium

### per litre

Stock solution 1	1.0 ml
Stock solution 2	1.0 ml
Stock solution 3 (Trace elements)	0.1 ml
Stock solution 4 (Vitamin mix)	1.0 ml

Make up to 1 litre with filtered natural seawater. Adjust pH to **8.0** with 1M NaOH or 1M HCl prior to autoclaving. For agar, add 15 g per litre Bacteriological Agar. Autoclave at 15 psi for 15 minutes.

### f/10 Medium

For f/10 medium for calcifying *Emiliania*, simply dilute all stock solutions by 1/5th

### f/2Q 'Quad'

This medium will provide nutrients for long lasting, dense cultures and can be used in liquid and agar forms.

Use 4.0 ml of stock solution 1 (NaNO<sub>3</sub>) and 4.0 ml of stock solution 2 (NaH<sub>2</sub>PO<sub>4</sub>.2H<sub>2</sub>O).

Created on: 05 Nov 2019	CCAP (Culture Collection of Algae and Protozoa), SAMS Ltd, Scottish Marine Institute, Oban, Argyll, PA37 1QA, UK Tel: +44 (0)1631 559000 Fax: +44 (0)1631 559001 Email: ccap@sams.ac.uk Web: www.ccap.ac.uk	2 Pages
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**Reference**

Guillard RRL & Ryther JH (1962) Studies of marine planktonic diatoms. I. *Cyclotella nana* Hustedt and *Detonula confervaceae* (Cleve) Gran. Can. J. Microbiol. 8: 229-239. – adapted for CCAP

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