

# **f/2 modified**

## **(Guillard and Ryther 1962, Guillard 1975)**

add the following stock solutions to 900 ml of filtered seawater (0,1µm) and fill up to 1 liter

<b>Components</b>	<b>Stock Solution</b>	<b>Addition per Litre of Culture Medium</b>
1. $\text{NaNO}_3$	75.00 g / l $\text{dH}_2\text{O}$	1 ml
2. $\text{NaH}_2\text{PO}_4 \times \text{H}_2\text{O}$	5.00 g / l $\text{dH}_2\text{O}$	1 ml
<b>3. Vitamin Solution</b>		1 ml
Vitamin B12	0.20 mg / l $\text{dH}_2\text{O}$	
Biotin	1.00 mg / l $\text{dH}_2\text{O}$	
Thiamine-HCl	100.00 mg / l $\text{dH}_2\text{O}$	
Niacinamide	0.10 mg / l $\text{dH}_2\text{O}$	
pH of the Vitamin Solution should be around pH 7.0		
<b>4. Trace Metals</b>		1 ml
<b>4.1. Preparation of Trace Metal Solution</b>		
$\text{Na}_2\text{EDTA} \times 2 \text{ H}_2\text{O}$ (Titriplex III) : 4.36 g		
$\text{FeCl}_3 \times 6 \text{ H}_2\text{O}$ : 3.15 g		
Dissolve in 1000 ml $\text{dH}_2\text{O}$ , then add 1 ml of Primary Trace Metals each (see below). Autoclave!		
Primary Trace Metals are stored frozen as 1 ml aliquots.		
<b>4.2. Primary Trace Metals</b>		
4.2.1. $\text{CoCl}_2 \times 6 \text{ H}_2\text{O}$	1.00 g / 100 ml $\text{dH}_2\text{O}$	
4.2.2. $\text{CuSO}_4 \times 5 \text{ H}_2\text{O}$	0.98 g / 100 ml $\text{dH}_2\text{O}$	
4.2.3. $\text{MnCl}_2 \times 4 \text{ H}_2\text{O}$	18.00 g / 100 ml $\text{dH}_2\text{O}$	
4.2.4. $\text{Na}_2\text{MoO}_4 \times 2 \text{ H}_2\text{O}$	0.63 g / 100 ml $\text{dH}_2\text{O}$	
4.2.5. $\text{ZnSO}_4 \times 7 \text{ H}_2\text{O}$	2.20 g / 100 ml $\text{dH}_2\text{O}$	

You can also buy Guillard's (F/2) Marine Water Enrichment Solution 50 X, is a concentrate of major nutrients, trace metals and vitamins that can be diluted in filtered seawater to support reconstitution of Guillard's (F/2) Marine Enrichment medium. G0154 without silicate and G9903 with silicate.