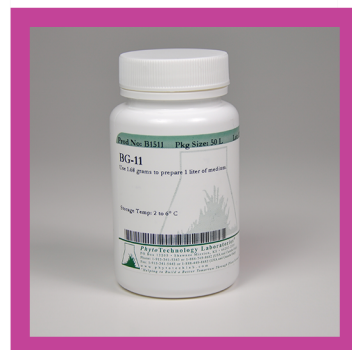


# PHYCOLOGY



## PHYCOLOGY

PhytoTechnology Laboratories® has recently introduced a series of products for phycology research. With media and reagents for freshwater and marine algae and cyanobacteria, all manufactured to the same levels of quality as our plant tissue culture media.

Most components used in the formulation of Phycology Media are available as individual components. Check the Biochemicals Section on Page 15 for component product listings and more information.

Check [www.phytotechlab.com](http://www.phytotechlab.com) frequently as we continue to expand this product line.

### A256 - ACETIC ACID, GLACIAL

See Biochemicals Section for Complete Listing

### B1511 - BLUE-GREEN MEDIUM (BG-11)

A growth medium for freshwater cyanobacteria as described by Stanier *et al.* (1971).

This medium can be buffered with HEPES (H326), and is biologically tested with 20mM of HEPES per liter of medium.

- Store at 2 to 6 °C
- Soluble in Water
- Use at 1.68 grams per liter of medium
- Adjust to pH 8.0 ± 0.1
- Algal Culture Tested

#### Components (mg/L)

Boric Acid	2.86
Calcium Chloride, Anhydrous	27.18
Citric Acid	6.0
Cobalt Nitrate Hexahydrate	0.049
Cupric Sulfate Pentahydrate	0.079
Ferric Ammonium Citrate	6.0
Magnesium Sulfate, Anhydrous	75.0
Manganese Chloride Tetrahydrate	1.81
Disodium Magnesium EDTA	1.0
Potassium Phosphate, Dibasic	40.0
Sodium Carbonate, Anhydrous	20.0
Sodium Molybdate Dihydrate	0.39
Sodium Nitrate	1500.0
Zinc Sulfate Heptahydrate	0.222
Approximate pH at Room Temperature	8.0 ± 1.0

#### AVAILABLE PACKAGE SIZES

1L	10L	50L
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### B1411 - BLUE-GREEN MEDIUM (BG-11)

#### 50X CONCENTRATE SOLUTION

A growth medium for freshwater cyanobacteria as described by Stanier *et al.* (1971).

This medium can be buffered with HEPES (H326), and is biologically tested with 20mM of HEPES per liter of medium.

- Store at 2 to 6 °C
- Miscible with Water
- Use at 20 milliliters per liter of medium
- Adjust to pH 8.0 ± 0.1
- Algal Culture Tested




#### Components (mg/L)

Boric Acid	143
Calcium Chloride, Anhydrous	1359
Citric Acid	300
Cobalt Nitrate Hexahydrate	2.45
Cupric Sulfate Pentahydrate	3.95
Ferric Ammonium Citrate	300
Magnesium Sulfate, Anhydrous	3750
Manganese Chloride Tetrahydrate	90.5
Disodium Magnesium EDTA	50
Potassium Phosphate, Dibasic	2000
Sodium Carbonate, Anhydrous	1000
Sodium Molybdate Dihydrate	19.5
Sodium Nitrate	75000
Zinc Sulfate Heptahydrate	11.1
Approximate pH at Room Temperature	4.2 ± 0.5

#### AVAILABLE PACKAGE SIZES

1L	2L
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<b>B1675 - BOLD'S BASAL MEDIUM (BBM)</b>	
A traditional freshwater algal medium for axenic maintenance as described by Nichols & Bold (1965). 1.0 mL of 0.1% Sulfuric Acid Solution (S7664) to be added per liter of media at 1x concentration.	
<ul style="list-style-type: none"> <li>• Store at 2 to 6 °C</li> <li>• Soluble in Water</li> <li>• Use at 0.705 grams per liter of medium</li> <li>• Adjust to pH 6.6 ± 0.1</li> <li>• Algal Culture Tested</li> </ul>	
Components (mg/L)	
Boric Acid	11.42
Calcium Chloride, Anhydrous	18.87
Cobalt Nitrate Hexahydrate	0.49
Cupric Sulfate Pentahydrate	1.57
EDTA, Disodium Salt	63.69
Ferrous Sulfate Heptahydrate	4.98
Magnesium Sulfate, Anhydrous	36.63
Manganese Chloride Tetrahydrate	1.44
Potassium Hydroxide	31.0
Potassium Phosphate, Dibasic	75.0
Potassium Phosphate, Monobasic	175.0
Sodium Chloride	25.0
Sodium Molybdate	1.19
Sodium Nitrate	250.0
Zinc Sulfate Heptahydrate	8.82
Approximate pH at Room Temperature	8.0 ± 2.0
AVAILABLE PACKAGE SIZES	
1L	50L

<b>B1650 - BOLD'S BASAL MEDIUM (BBM) 50X CONCENTRATE SOLUTION</b>	
A freshwater algal standard medium as described by Nichols & Bold (1965).	
<ul style="list-style-type: none"> <li>• Store at 2 to 6 °C</li> <li>• Miscible with Water</li> <li>• Use at 20.0 mL per liter of medium</li> <li>• Adjust to pH 6.6 ± 0.1</li> <li>• Algal Culture Tested</li> </ul>	
	
Components (mg/L)	
Boric Acid	571
Calcium Chloride, Anhydrous	944
Cobalt Nitrate Hexahydrate	24.5
Cupric Sulfate Pentahydrate	78.5
EDTA, Disodium Salt	3181
Ferrous Sulfate Heptahydrate	249
Magnesium Sulfate, Anhydrous	3750
Manganese Chloride Tetrahydrate	72
Potassium Hydroxide	2984
Potassium Phosphate, Dibasic	1550
Potassium Phosphate, Monobasic	3750
Sodium Chloride	8750
Sodium Molybdate	1250
Sodium Nitrate	12550
Zinc Sulfate Heptahydrate	441
Approximate pH at Room Temperature	4.2 ± 0.5
AVAILABLE PACKAGE SIZES	
500mL	2L

<b>C2124 - COBALT SULFATE, HEPTAHYDRATE</b>	
Plant Tissue Culture Tested	
<ul style="list-style-type: none"> <li>• Powder</li> <li>• CAS Number: 10026-24-1</li> <li>• Formula: <math>\text{CoSO}_4 \cdot 7\text{H}_2\text{O}</math></li> <li>• Molecular Weight: 281.103</li> <li>• Soluble in Water</li> <li>• Store at Room Temperature</li> <li>• Merck 13, 2473</li> </ul>	
AVAILABLE PACKAGE SIZES	
25g	100g

## F3222 - f/2 GUILLARD'S MARINE ENRICHED SEAWATER

A powder formulation of the vitamins, macro- and trace element solutions as described by Guillard and Ryther (1962). To be dissolved into Seawater . Contains silicate for diatom growth.

- Store at 2 to 6 °C
- Partially Soluble in Seawater
- Use at 0.1 grams per liter of medium
- Adjust to pH 7.5 ± 0.5
- Algal Culture Tested

### Components (mg/L)

Sodium Nitrate	75.0
Cobalt Chloride Hexahydrate	0.01
Cupric Sulfate Pentahydrate	0.01
EDTA, Disodium Salt	4.36
Ferric Chloride, Anhydrous	1.9
Manganese Chloride Tetrahydrate	0.18
Molybdic Acid, Disodium Salt	0.006
Sodium Phosphate, Monobasic	5.0
Sodium Metasilicate, Anhydrous	12.94
Zinc Sulfate, Heptahydrate	0.022
Biotin	0.0005
Cyanocobalamin, Vitamin B12	0.0005
Thiamine Hydrochloride	0.1
Approximate pH at Room Temperature	6.0 ± 2.0

### AVAILABLE PACKAGE SIZES

1L	10L	50L
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## G3454 - f/2 GUILLARD'S MARINE ENRICHED SEAWATER WITHOUT SILICATE

A powder formulation of the vitamins, macro- and trace element solutions as described by Guillard and Ryther (1962). This product does not contain silicate, and can therefore be used for the axenic maintenance of non-diatom marine algae. To be dissolved into Seawater .

- Store at 2 to 6 °C
- Partially Soluble in Seawater
- Use at 0.09 grams per liter of medium
- Adjust to pH 7.5 ± 0.5
- Algal Culture Tested

### Components (mg/L)

Sodium Nitrate	75.0
Cobalt Chloride Hexahydrate	0.01
Cupric Sulfate Pentahydrate	0.01
EDTA, Disodium Salt	4.36
Ferric Chloride, Anhydrous	1.9
Manganese Chloride Tetrahydrate	0.18
Molybdic Acid, Disodium Salt	0.006
Sodium Phosphate, Monobasic	5.0
Zinc Sulfate, Heptahydrate	0.022
Biotin	0.0005
Cyanocobalamin, Vitamin B12	0.0005
Thiamine Hydrochloride	0.1
Approximate pH at Room Temperature	6.0 ± 2.0

### AVAILABLE PACKAGE SIZES

10L	50L
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## F3138 - FERRIC AMMONIUM SULFATE

Plant Tissue Culture Tested

- Powder
- CAS Number: 7783-83-7
- Formula:  $\text{NH}_4\text{Fe}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
- Molecular Weight: 482.25
- Soluble in Water
- Store at Room Temperature

### AVAILABLE PACKAGE SIZES

100g
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## F2876 - FERRIC CHLORIDE, ANHYDROUS

Plant Tissue Culture Tested

- Powder
- CAS Number: 7705-08-0
- Formula:  $\text{FeCl}_3$
- Molecular Weight: 162.2
- Soluble in Water
- Store at Room Temperature
- Merck 13, 4048

### AVAILABLE PACKAGE SIZES

25g	100g
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## CUSTOM MEDIA & SERVICES



PhytoTechnology Laboratories® offers custom manufacturing and testing services. For more information please see page 12.

- Custom Dry Powder Media
- Custom Liquid Media
- Custom Packaging
- Testing Services

**H326 - HEPES, FREE ACID**

See Molecular Biology Section for Complete Listing

**M5781 - METHYLENE BLUE**

See Seed Testing Section for Complete Listing

**P6905 - POTASSIUM BROMIDE**

See Biochemicals Section for Complete Listing

**S7550 - SODIUM CARBONATE**

Plant Tissue Culture Tested

- Powder
- CAS Number: 497-19-8
- Formula:  $\text{Na}_2\text{CO}_3$
- Molecular Weight: 105.99
- Soluble in Water
- Store at Room Temperature

**AVAILABLE PACKAGE SIZES**

100g                                  500g                                  1Kg

**S7834 - SODIUM METASILICATE, ANHYDROUS**

An essential nutrient for diatoms.  
Algal Culture Tested

- Powder
- CAS Number: 6834-92-0
- Formula:  $\text{Na}_2\text{SiO}_3$
- Molecular Weight: 122.06
- Partially Soluble in Water
- Store at Room Temperature

**AVAILABLE PACKAGE SIZES**

100g                                  500g                                  1kg

**S7668 - SUEOKA'S HIGH SALT MEDIUM (HSM)**

A general maintenance medium used for freshwater algae; a high-salt alternative to Tris-Acetate-Phosphate medium (T8224, T8050).

2 g/L Sodium Acetate recommended for heterotrophic growth.

- Store at 2 to 6 °C
- Soluble in Water
- Use at 2.78 grams per liter of medium
- Adjust to pH  $6.8 \pm 0.1$
- Algal Culture Tested

**Components (mg/L)**

Ammonium Chloride	500
Ammonium Molybdate, Tetrahydrate	1.1
Boric Acid	11.4
Calcium Chloride, Anhydrous	7.548
Cobalt Chloride, Hexahydrate	1.61
Cupric Sulfate, Pentahydrate	1.57
Sodium EDTA, Dihydrate	50
Ferrous Sulfate, Heptahydrate	4.99
Magnesium Sulfate, Anhydrous	9.77
Manganese Chloride, Tetrahydrate	5.060
Potassium Phosphate, Dibasic	1440
Potassium Phosphate, Monobasic, Anhydrous	720
Zinc Sulfate, Heptahydrate	22
Approximate pH at Room Temperature	$7.0 \pm 1.0$

**AVAILABLE PACKAGE SIZES**

1L    10L    50L

**S7664 - SULFURIC ACID, 0.1% SOLUTION**

Used with Bold's Basal Medium (B1675)

Sterile Filtered

Plant Tissue Culture Tested

- Liquid
- CAS Number: 7664-93-9
- Formula:  $\text{H}_2\text{SO}_4$
- Molecular Weight: 98.08
- Miscible with Water
- Store at Room Temperature



**AVAILABLE PACKAGE SIZES**

10x1mL                                  25mL                                  100mL

# PRODUCT CATALOGUE & LABORATORY GUIDE

## T8224 - TRIS ACETATE PHOSPHATE (TAP)

A standard maintenance medium for freshwater algal species, as described by Gorman & Levine (1965).  
Add 1 mL Glacial Acetic Acid (Product Number A256) per liter of medium for heterotrophic growth.  
Use powder as is for photoautotrophic growth.

- Store at 2 to 6 °C
- Soluble in Water
- Use at 3.17 grams per liter of medium
- Algal Culture Tested

Components (mg/L)	
Ammonium Chloride	400.0
Tris-Base	2420
Ammonium Molybdate Tetrahydrate	1.1
Boric Acid	11.4
Calcium Chloride, Anhydrous	37.74
Cobalt Chloride Hexahydrate	1.61
Cupric Sulfate Pentahydrate	1.57
EDTA, Disodium Salt	50.0
Ferrous Sulfate Heptahydrate	4.9
Magnesium Sulfate, Anhydrous	48.83
Magnesium Chloride Tetrahydrate	5.06
Potassium Phosphate, Dibasic	108.0
Potassium Phosphate, Monobasic	54.0
Zinc Sulfate Heptahydrate	22.0
Approximate pH at Room Temperature	7.0 ± 0.1
AVAILABLE PACKAGE SIZES	
1L	10L 50L

## T8050 - TRIS ACETATE PHOSPHATE (TAP) 1X SOLUTION

A standard maintenance medium for freshwater algal species, as described by Gorman & Levine (1965).  
Contains Glacial Acetic Acid (Product Number A256) for use as a heterotrophic growth medium.

- Store at 2 to 6 °C
- Miscible with Water
- Contains 17.4 mM of Acetate
- pH adjusted to 7.0 ± 0.1
- Algal Culture Tested



Components (mg/L)	
Ammonium Chloride	400.0
Tris-Base	2420
Ammonium Molybdate Tetrahydrate	1.1
Boric Acid	11.4
Calcium Chloride, Anhydrous	37.74
Cobalt Chloride Hexahydrate	1.61
Cupric Sulfate Pentahydrate	1.57
EDTA, Disodium Salt	50.0
Ferrous Sulfate Heptahydrate	4.9
Magnesium Sulfate, Anhydrous	48.83
Magnesium Chloride Tetrahydrate	5.06
Potassium Phosphate, Dibasic	108.0
Potassium Phosphate, Monobasic	54.0
Zinc Sulfate Heptahydrate	22.0
Glacial Acetic Acid	1 mL
Approximate pH at Room Temperature	7.0 ± 0.1
AVAILABLE PACKAGE SIZES	
500mL	1L 2L

## W783 - WATER, PLANT TISSUE CULTURE GRADE

See Molecular Biology Section for Complete Listing