

| Phyto Technology Laboratories® www.phytotechlab.com All components expressed in mg/L © 2009 Phyto Technology Laboratories® | BM-1 Terrestrial Orchid Medium w/out Agar | BM-1 Terrestrial Orchid Medium w/ Agar | BM-2 Terrestrial Orchid Medium w/ Agar | BM-2 Terrestrial Orchid Medium w/out Agar | Fast Terrestrial Orchid Medium | Ichihashi New Phalaenopsis (NP) Medium | Knudson C Orchid Medium | Knudson C Modified Plus Orchid Medium |
|--|--|---|--|--|-----------------------------------|---|----------------------------|--|
| COMPONENT | B138 | B141 | B142 | B470 | F522 | I365 | K400 | K425 |
| Aluminum Chloride•6H ₂ O | | | | | 0.030 | | | |
| Ammonium Nitrate | | | | | 167.0 | 82.0 | 500.0 | |
| Ammonium Sulfate | | | | | | 303.900 | 500.000 | |
| Boric Acid | 10.000 | 10.000 | 10.000 | 10.000 | 1.000 | 3.100 | | |
| Calcium Nitrate | | | | | 40.100 | 637.600 | 347.200 | |
| Cobalt Chloride•6H ₂ O | 0.0250 | 0.0250 | 0.0250 | 0.0250 | | 0.0125 | | |
| Cupric Sulfate•5H ₂ O | 0.0250 | 0.0250 | 0.0250 | 0.0250 | 0.0300 | 0.0125 | | |
| Na ₂ EDTA•2H ₂ O | 37.250 | 37.250 | 37.250 | 37.250 | | 37.300 | | |
| Ferric Chloride | | | | | 1.000 | | | |
| Ferric Sodium EDTA | | | | | 17.000 | | | |
| Ferrous Sulfate•7H ₂ O | 27.850 | 27.850 | 27.850 | 27.850 | | 27.800 | 25.000 | |
| Magnesium Nitrate•6H ₂ O | | | | | | 256.400 | | |
| Magnesium Sulfate, Anhydrous | 100.000 | 100.000 | 100.000 | 100.000 | 19.800 | | 122.125 | |
| Manganese Sulfate•H ₂ O | 25.000 | 25.000 | 25.000 | 25.000 | 0.800 | 11.200 | 5.682 | |
| Sodium Molybdate(VI)•2H ₂ O | 0.2500 | 0.2500 | 0.2500 | 0.2500 | | 0.1250 | | |
| Nickel Chloride•6H ₂ O | | | | | 0.030 | | | |
| Potassium Chloride | | | | | 167.000 | | 250.000 | |
| Potassium Iodide | | | | | 0.0100 | 0.4150 | | |
| Potassium Nitrate | | | | | | 424.0 | | |
| Potassium Phosphate, Dibasic | | | | | 83.0 | | | |
| Potassium Phosphate, Monobasic, Anhydrous | 300.00 | 300.00 | 300.00 | 300.00 | | 462.70 | 250.00 | |
| Zinc Sulfate•7H ₂ O | 10.000 | 10.000 | 10.000 | 10.000 | 1.000 | 4.300 | | |
| Agar | | 5,000.0 | 6,000.0 | | 7,000.0 | | | |
| 6-Benzylaminopurine | | | 0.200 | 0.200 | | | | |
| D-Biotin | 0.050 | 0.050 | 0.050 | 0.050 | 0.010 | | | |
| Casein, Enzymatic Hydrolysate | 500.000 | 500.000 | 500.000 | 500.000 | | | | |
| Fructose | | | | | 5,000.0 | | | |
| Folic Acid | 0.500 | 0.500 | 0.500 | 0.500 | | | | |
| Gellan Gum, CultureGel™ | | | | | | 3,000.000 | | |
| L-Glutamine | 100.000 | 100.000 | 100.000 | 100.000 | | | | |
| Glycine | 2.000 | 2.000 | 2.000 | 2.000 | | 2.000 | | |
| <i>myo</i> -Inositol | 100.00 | 100.00 | 100.00 | 100.00 | | 100.00 | | |
| Nicotinic Acid | 5.000 | 5.000 | 5.000 | 5.000 | 0.100 | 0.500 | | |
| Peptone from Meat | | | | | 1,670.0 | | | |
| Pyridoxine•HCl | 0.500 | 0.500 | 0.500 | 0.500 | | 0.500 | | |
| Sucrose | 20,000.0 | 20,000.0 | 20,000.0 | 20,000.0 | 11,670.0 | 20,000.0 | 20,000.0 | |
| Thiamine•HCl | 0.500 | 0.500 | 0.500 | 0.500 | | 0.100 | | |
| Yeast Extract | | | | | 2,000.0 | | | |
| Grams of powder to prepare 1 liter | 21.22 | 26.22 | 27.22 | 21.22 | 27.84 | 25.35 | 22 | 79.11 |
| pH±0.5 at RT | 5.5 | 5.5 | 5.5 | 5.25 | NS | 4.75 | 4.5 | NS |

Proprietary Formulation

NS = No Specification Established

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|---|-------------------------|---|---|--|---|----------------------------------|--|
| COMPONENT | L472 | M482 | M507 | M534 | M551 | M579 | O139 |
| Aluminum Chloride•6H ₂ O | 0.056 | | | | | | |
| Ammonium Nitrate | | | 1650.0 | | | | 825.0 |
| Ammonium Sulfate | 1,000.000 | | | | | 100.000 | |
| Boric Acid | 1.014 | | 6.200 | | | 0.600 | 3.100 |
| Calcium Chloride, Anhydrous | | | 333.000 | | | | 166.000 |
| Calcium Nitrate | 347.200 | | | | | 100.000 | |
| Calcium Phosphate, Tribasic | | 75.000 | | 75.000 | 75.000 | | |
| Cobalt Chloride•6H ₂ O | | | 0.0250 | | | | 0.0125 |
| Cobalt Nitrate•6H ₂ O | | | | | | 0.0500 | |
| Cupric Sulfate•5H ₂ O | 0.0190 | | 0.0250 | | | 0.0500 | 0.0125 |
| Na ₂ EDTA•2H ₂ O | | 37.260 | | 37.260 | 37.260 | 22.300 | 37.300 |
| Ferric Citrate | 4.400 | | | | | | |
| Ferric Sodium EDTA | | | 36.700 | | | | |
| Ferrous Sulfate•7H ₂ O | | 27.800 | | 27.800 | 27.800 | 16.700 | 27.850 |
| Magnesium Sulfate, Anhydrous | 58.620 | 97.676 | 181.000 | 97.676 | 97.676 | 250.000 | 90.350 |
| Manganese Chloride•4H ₂ O | | | | | | 0.400 | |
| Manganese Sulfate•H ₂ O | 0.052 | 1.540 | 16.900 | 1.540 | 1.540 | | 8.450 |
| Sodium Molybdate(VI)-2H ₂ O | | | 0.2500 | | | 0.0500 | 0.1250 |
| Nickel Chloride•6H ₂ O | 0.031 | | | | | | |
| Potassium Chloride | 1,050.0 | | | | | | |
| Potassium Iodide | 0.0990 | | 0.8300 | | | 0.0300 | 0.4150 |
| Potassium Nitrate | | | 1900.0 | | | 180.0 | 950.0 |
| Potassium Phosphate, Monobasic, Anhydrous | 135.00 | 75.00 | 170.00 | 75.00 | 75.00 | | 85.00 |
| Sodium Phosphate, Monobasic | | | | | | 150.00 | |
| Zinc Sulfate•7H ₂ O | 0.565 | | 8.600 | | | 0.050 | 5.300 |
| Activated Charcoal | | 1,000.0 | | 1,000.0 | 1,000.0 | 2,000.0 | |
| Agar | | | | | 7,000.0 | 7,000.0 | |
| D-Biotin | | 0.050 | | 0.050 | 0.050 | 0.050 | |
| Casein, Enzymatic Hydrolysate | | 400.0 | | 400.0 | 400.0 | | |
| Citric Acid, Anhydrous | | | 150.000 | | | | |
| Folic Acid | | 0.500 | | 0.500 | 0.500 | 0.300 | |
| Glycine | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | | |
| Indole-3-acetic Acid | | | 0.300 | | | | |
| Indole-3-butyric Acid | | | 1.750 | | | | |
| MES (Free Acid) | | | | | | | 1000.0 |
| <i>myo</i> -Inositol | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | | 100.00 |
| α -Naphthaleneacetic Acid | | | 1.750 | | | | |
| Nicotinic Acid | 1.000 | 5.000 | 0.500 | 5.000 | 5.000 | 1.250 | 1.000 |
| Pineapple Powder | | | | 20,000.0 | 20,000.0 | | |
| Peptone from Meat | | | | | | | 2,000.0 |
| Pyridoxine•HCl | 1.000 | 5.000 | 0.500 | 5.000 | 5.000 | 0.300 | 1.000 |
| Riboflavin | | | | | | 0.050 | |
| Sucrose | 20,000.0 | | 20,000.0 | | | 20,000.0 | 20,000.0 |
| Thiamine•HCl | 10.000 | 10.000 | 10.000 | 10.000 | 10.000 | 0.300 | 10.000 |
| Grams of powder to prepare 1 liter | 22.71 | 1.84 | 24.57 | 21.84 | 28.84 | 29.82 | 25.31 |
| pH±0.5 at RT | 4.5 | 5.75 | 3.25 | 4.25 | 4.25 | NS | 5.25 |
| NS = No Specification Established | | | | | | | |

| Phyto Technology Laboratories® www.phytotechlab.com All components expressed in mg/L © 2009 <i>Phyto Technology Laboratories®</i> | Orchid Maintenance/ Replate Medium | H1 Oat Medium | H2 Oat Medium | Orchid Multiplication Medium | PhytoTech Phalaenopsis Replate Medium | Orchid Maintenance Medium | Orchid Maintenance Medium | Orchid Seed Sowing Medium |
|---|------------------------------------|---------------|---------------|------------------------------|---------------------------------------|---------------------------|---------------------------|---------------------------|
| COMPONENT | O156 | O612 | O622 | O753 | P656 | P658 | P668 | P723 |
| Ammonium Nitrate | 825.0 | | | 825.0 | Proprietary Formulation | 825.0 | 825.0 | 412.5 |
| Boric Acid | 3.100 | | | 3.100 | | 3.100 | 3.100 | 1.650 |
| Calcium Chloride, Anhydrous | 166.000 | | | 166.000 | | 166.000 | 166.000 | 83.000 |
| Calcium Nitrate | | 96.600 | 96.600 | | | | | |
| Cobalt Chloride•6H ₂ O | 0.0125 | | | 0.0125 | | 0.0125 | 0.0125 | 0.0063 |
| Cupric Sulfate•5H ₂ O | 0.0125 | | | 0.0125 | | 0.0125 | 0.0125 | 0.0063 |
| Na ₂ EDTA•2H ₂ O | 37.300 | | | 37.300 | | 37.300 | 37.300 | 18.650 |
| Ferrous Sulfate•7H ₂ O | 27.850 | | | 27.850 | | 27.850 | 27.850 | 13.930 |
| Magnesium Sulfate, Anhydrous | 90.350 | 23.900 | 23.900 | 90.350 | | 90.350 | 90.350 | 75.180 |
| Manganese Sulfate•H ₂ O | 8.450 | | | 8.450 | | 8.450 | 8.450 | 4.230 |
| Sodium Molybdate(VI)•2H ₂ O | 0.1250 | | | 0.1250 | | 0.1250 | 0.1250 | 0.0625 |
| Potassium Chloride | | 100.000 | 100.000 | | | | | |
| Potassium Iodide | 0.4150 | | | 0.4150 | | 0.4150 | 0.4150 | 0.2075 |
| Potassium Nitrate | 950.0 | | | 950.0 | | 950.0 | 950.0 | 475.0 |
| Potassium Phosphate, Monobasic, Anhydrous | 85.00 | 200.00 | 200.00 | 85.00 | | 85.00 | 85.00 | 42.50 |
| Zinc Sulfate•7H ₂ O | 5.300 | | | 5.300 | | 5.300 | 5.300 | 2.650 |
| Activated Charcoal | 2,000.0 | | | | | 2,000.0 | 2,000.0 | 1,000.0 |
| Agar | | 7,000.0 | 7,000.0 | 7,000.0 | | 8,000.0 | | 8,000.0 |
| Banana Powder | 30,000.0 | | | | | | | |
| 6-Benzylaminopurine | | | | 2.000 | | | | |
| Glucose | | | 2,000.0 | | | | | |
| MES (Free Acid) | 1000.0 | | | 1000.0 | | 1000.0 | 1000.0 | 500.0 |
| <i>myo</i> -Inositol | 100.00 | | | 100.00 | | 100.00 | 100.00 | 100.00 |
| α -Naphthaleneacetic Acid | | | | 0.500 | | | | |
| Nicotinic Acid | 1.000 | | | 0.500 | | 1.000 | 1.000 | 1.000 |
| Oats, Rolled | | 3,000.000 | 3,000.000 | | | | | |
| Peptone from Meat | 2,000.0 | | | 2,000.0 | | 2,000.0 | 2,000.0 | 2,000.0 |
| Pyridoxine•HCl | 1.000 | | | 0.500 | | 1.000 | 1.000 | 1.000 |
| Sucrose | 20,000.0 | 2,000.0 | | 20,000.0 | 20,000.0 | 20,000.0 | 20,000.0 | |
| Thiamine•HCl | 10.000 | | | 1.000 | 10.000 | 10.000 | 10.000 | |
| Yeast Extract | | 100.000 | 100.000 | | | | | |
| Grams of powder to prepare 1 liter | 57.31 | 12.52 | 12.52 | 32.30 | 61.31 | 35.31 | 27.31 | 32.74 |
| pH±0.5 at RT | 5.00 | NS | NS | 5.25 | NS | 5.25 | 5.25 | 5.75 |
| NS = No Specification Established | | | | | | | | |

| Phyto Technology Laboratories® www.phytotechlab.com All components expressed in mg/L © 2009 <i>Phyto Technology Laboratories®</i> | Orchid Seed Sowing Medium | Orchid Maintenance/Replate Medium | PhytoTech Orchid Replate Medium | PhytoTech Orchid Replate Medium | PhytoTech Orchid Replate Medium | Orchid Multiplication Medium | Terrestrial (Cypripedium) Orchid Medium | Terrestrial (Cypripedium) Orchid Medium | Terrestrial (Cypripedium) Orchid Medium | | |
|---|---------------------------|-----------------------------------|---------------------------------|---------------------------------|---------------------------------|------------------------------|---|---|---|----------|----------|
| COMPONENT | P727 | P748 | P781 | P782 | P785 | P793 | T839 | T842 | T849 | | |
| Ammonium Citrate | | | Proprietary Formulation | Proprietary Formulation | Proprietary Formulation | | 19.000 | 19.000 | 19.000 | | |
| Ammonium Nitrate | 412.5 | 825.0 | | | | 825.0 | | | 1400.0 | | |
| Boric Acid | 1.650 | 3.100 | | | | 3.100 | 0.500 | 0.500 | 0.500 | | |
| Calcium Chloride, Anhydrous | 83.000 | 166.000 | | | | 166.000 | | | | | |
| Calcium Nitrate | | | | | | | 400.000 | 600.000 | 400.000 | | |
| Cobalt Chloride•6H ₂ O | 0.0063 | 0.0125 | | | | 0.0125 | | | | | |
| Cupric Sulfate•5H ₂ O | 0.0063 | 0.0125 | | | | 0.0125 | 0.0250 | 0.0250 | 0.0250 | | |
| Na ₂ EDTA•2H ₂ O | 18.650 | 37.300 | | | | 37.300 | | | | | |
| Ferric Ammonium Citrate | | | | | | | 25.000 | 25.000 | 25.000 | | |
| Ferrous Sulfate•7H ₂ O | 13.930 | 27.850 | | | | 27.850 | | | | | |
| Magnesium Sulfate, Anhydrous | 75.180 | 90.350 | | | | 90.350 | 97.699 | 97.699 | 97.699 | | |
| Manganese Sulfate•H ₂ O | 4.230 | 8.450 | | | | 8.450 | 1.540 | 1.540 | 1.540 | | |
| Sodium Molybdate(VI)•2H ₂ O | 0.0625 | 0.1250 | | | | 0.1250 | 0.0200 | 0.0200 | 0.0200 | | |
| Potassium Chloride | | | | | | | 100.000 | 100.000 | 100.000 | | |
| Potassium Iodide | 0.2075 | 0.4150 | | | | 0.4150 | 0.1000 | 0.1000 | 0.1000 | | |
| Potassium Nitrate | 475.0 | 950.0 | | | | 950.0 | 200.0 | 200.0 | 200.0 | | |
| Potassium Phosphate, Monobasic, Anhydrous | 42.50 | 85.00 | | | | 85.00 | 200.00 | 200.00 | 200.00 | | |
| Zinc Sulfate•7H ₂ O | 2.650 | 5.300 | | | | 5.300 | 0.500 | 0.500 | 0.500 | | |
| Activated Charcoal | | 2,000.0 | | | | | | | | | |
| Agar | 8,000.0 | 7,000.0 | | | | | | 6,000.0 | 6,000.0 | 6,000.0 | |
| Banana Powder | | 30,000.0 | | | | | | | | | |
| 6-Benzylaminopurine | | | | | | | | 2,000 | | | |
| Casein, Enzymatic Hydrolysate | | | | | | | | | 400.000 | 200.000 | |
| D-Glucose, Anhydrous | | | | | | | | | 20,000.0 | 20,000.0 | 20,000.0 |
| MES (Free Acid) | 500.0 | 1000.0 | | | | | | 1000.0 | | | |
| <i>myo</i> -Inositol | 100.00 | 100.00 | | | | | | 100.00 | | | |
| α -Naphthaleneacetic Acid | | | | | 0.500 | | | | | | |
| Nicotinic Acid | 1.000 | 1.000 | | | 0.500 | | | | | | |
| Peptone from Meat | 2,000.0 | 2,000.0 | | | 2,000.0 | | | | | | |
| Pyridoxine•HCl | 1.000 | 1.000 | | | 0.500 | | | | | | |
| Sucrose | 20,000.0 | 20,000.0 | | | 20,000.0 | | | | | | |
| Thiamine•HCl | 10.000 | 10.000 | | | 1.000 | | | | | | |
| Grams of powder to prepare 1 liter | 31.74 | 64.31 | 35.81 | 43.81 | 65.79 | 25.30 | 27.44 | 27.44 | 28.44 | | |
| pH±0.5 at RT | 5.50 | 5.00 | 4.75 | 5.00 | 4.75 | 5.25 | 5.50 | 5.50 | 5.25 | | |

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|---|---|--|--|--|
| Phyto Technology Laboratories® www.phytotechlab.com All components expressed in mg/L © 2009 <i>Phyto</i> Technology Laboratories® | Vacin & Went Modified Orchid Basal Salts | Vacin and Went Modified Orchid Medium | Vacin & Went Modified Orchid Medium | Vacin & Went Modified Orchid Medium |
| | V505 | V882 | V891 | V895 |
| | COMPONENT | | | |
| Ammonium Sulfate | 500.000 | 500.000 | 500.000 | 500.000 |
| Calcium Phosphate, Tribasic | 200.000 | 200.000 | 200.000 | 200.000 |
| Na ₂ EDTA•2H ₂ O | 37.260 | 37.260 | 37.260 | 37.260 |
| Ferrous Sulfate•7H ₂ O | 27.800 | 27.800 | 27.800 | 27.800 |
| Magnesium Sulfate, Anhydrous | 122.100 | 122.100 | 122.100 | 122.100 |
| Manganese Sulfate•H ₂ O | 5.600 | 5.600 | 5.600 | 5.600 |
| Potassium Nitrate | 525.0 | 525.0 | 525.0 | 525.0 |
| Potassium Phosphate, Monobasic, Anhy. | 250.00 | 250.00 | 250.00 | 250.00 |
| Agar | | | | 7,000.0 |
| Sucrose | | | 20,000.0 | 20,000.0 |
| Thiamine•HCl | | 0.400 | 0.400 | 0.400 |
| Grams of powder to prepare 1 liter | 1.67 | 1.67 | 21.67 | 28.67 |
| pH±0.5 at RT | 5.75 | 5.75 | 5.75 | 5.75 |