

Fertilizers

Ammonium Sulfate 21-0-0

Code: FERAS50P

Acid base quick source of nitrogen. Water soluble.
13 oz. of product to 100 gallons H₂O provides 200 ppm.

Size: 50 lb. bag

Calcium Nitrate 15.5-0-0

Code: FERCN50P

Water soluble basic salt of readily available nitrogen.
17 ounces. per 100 gallons H₂O provides 200 ppm.

Size: 50 lb. bag

Dolomitic Limestone

(Calcium & Magnesium Carbonates)

Code: FERDL50P

Basic source of calcium and magnesium. Neutralizes soil acidity to raise pH. 11% magnesium (Mg) and 21% calcium. 8 lbs. per 100 sq. ft. or 5 lbs. per cu. ft. Soil mix raises pH one unit.

Size: 50 lb. bag

Gypsum - Calcium Sulfate

Code: FERG50P

Neutral salt supplies calcium without raising pH. For clearing muddy ponds, use 700 lbs. per 1/2 acre of pond (6 ft. average depth).

Size: 50 lb. bag

Iron Sulphate

Code: FERIS50P

To correct iron deficiencies and acidify soil for azaleas and plants showing chlorosis. Use 1/4 lb. in 5 gallons H₂O.

Size: 50 lb. bag

Triple Super Phosphate - 0-46-0

Code: FERS50P

High source of phosphorous. Must be well mixed into the growing medium.

Size: 50 lb. bag

American Clay Works & Supply Company - 1-800-873-2297

Liquid Limestone

Code: FERLC2.5G

Excellent PH Adjustment Chemical. Raises soil pH and increases availability of some nutrients. Amount used best determined by label.

Size: 2.5 gallon

Limestone - Calcium Carbonate

Code: FERCC50P; FERCC40P

Raises soil pH and increases availability of some nutrients. Amount used best determined by label. Slow acting, good for grass in lawns.

Size: 40 or 50 lb. bag

Magnesium Sulphate - Epsom Salts

Code: FERMS50P

Used where magnesium sulphate is lacking in soil.

General use. 1/2 lb. per 100 sq. ft.

Size: 50 lb. bag

Phosphoric Acid 85% Liquid

Code: FERPA1G, FERPA5G, FERPA15G

An inexpensive way of supplying phosphorous through soil injectors. Cleans water lines of sprinkler systems of lime and other alkaline deposits.

Size: 1 gallon, 5 gallon, 15 gallon

Potassium Chloride - 0-0-60 (Muriate of Potash)

Code: FERMP50P

Improves plant metabolism and promotes disease resistance. 4.3 ounces to 100 gallons of H₂O provides 200 ppm.

Size: 50 lb. bag

Potassium Nitrate - 13-0-44 (Nitrate of Potash)

Code: FERPN50P

One of the principal forms of potash and nitrogen. Water soluble.

Use 1/2 lb. per 30 gallons H₂O.

Size: 50 lb. bag

Sprint 330

Code: BUS5LB

Unlike non chelated or weakly chelated irons, Sprint 330 is a strong chelate that maintains and protects iron availability in a wide variety of problem soils.

Size: 5 lb.

105 857 Bryant St, Denver, CO 80204 - www.americanclayworks.net

Fertilizers



17-3-6 TopDress Fertilizer Plus Minors/ST

Designed as a topdress fertilizer for use on container-grown woody ornamentals and foliage plants. Contains POLYS which provides controlled-release nitrogen and readily available phosphorus, potassium, magnesium, and micronutrients. Lasts 2 to 3 months in the South, 3 to 4 months in the Northeast, Midwest, and West Coast.

The Topdress Fertilizer Plus Minors/ST Advantage:

All the nitrogen has been coated using POLYS technology - an effective means of controlling release of nutrients • In addition to nitrogen, phosphorus, and potassium, provides important secondary - magnesium - and micronutrients - iron, manganese, zinc, and molybdenum • A highly visible product on the surface of the container • May be used in conjunction with liquid or dry fertilizer programs • Dry, dense, free-flowing, ready-to-use product of uniform particle size

NUTRIENT SOURCES:

- N:** Polymer-encapsulated sulfur-coated urea monoammonium phosphate
- P:** Monoammonium phosphate
- K:** Sulfate of potash magnesia
- Mg:** Magnesium Sulfate
- Fe:** Ferrous sulfate, ferrous oxide
- Mn:** Manganese oxide
- Zn:** Zinc oxide
- Mo:** Sodium molybdate

CONTROLLED-RELEASE STATEMENTS

N: A minimum of 85% of the total nitrogen in this product is controlled-release from polymer encapsulated sulfur-coated urea.

APPLICATION RATES: Apply this product to the surface of container-grown ornamentals at potting time if a fertilizer was not incorporated into the media prior to potting, or during the growth cycle as needed. Evenly distribute the product over the surface of the container at the recommended rates outlined in the following table.

Container sizes (top-dressing on established plants)	Approx. Number per cubic yard	Low	Medium	High
		Sensitive Plants	Nursery Stock	Grnhouse or Nursery Stock
Trade 1 gal.	300	9 g	12 g	16 g
Full 1 gal.	200	13 g	18 g	25 g
2 gal.	140	19 g	26 g	35 g
3 gal.	80	34 g	45 g	62 g
5 gal.	50	54 g	72 g	100 g

50 lbs. bag Code: FERTMT50P

American Clay Works & Supply Company - 1-800-873-2297

Scotts Fertilizers

With a proven track record and nearly 40 years experience in fertilizers, Scotts has become the name more growers trust.

Scotts introduced the very first controlled release fertilizer on the market, Osmocote®, and we never stopped perfecting our products. Our research and development team has produced the most flexible controlled release fertilizer program available. With the most advanced products in the industry, Scotts is sure to have the exact controlled release fertilizer you need.

Scotts® Champion®



21-18-18 General Purpose (SMG91430) 25 lb.

Combines N-P-K, magnesium and trace elements. Combats effects of high sodium in irrigation water especially when coupled with high alkalinity. Ideal for potted plants, bedding plants and cut flowers. Maximum solubility is 3 lb. per gal.

21-8-18 General Purpose (SMG91431) 25 lb.

Combines a high nitrate nitrogen, phosphorus, potassium, magnesium and elevated minor elements. Ideal for plugs, potted plants and bedding plants. Maximum solubility 3.5 lb. per gal.

15-0-14 with 5% Ca, 3% Mg (SMG91437) 25 lb.

Combines high nitrate nitrogen, phosphorus, potassium, calcium, magnesium and elevated minor nutrient package. Ideal for potted plants, bedding plants and plugs where additional calcium and magnesium are required. Maximum solubility 4 lb. per gal.

20-2-20 Low Phos Special (SMG91433) 25 lb.

A low phosphorus feed alternative to help control plant stretch. Also combats high alkaline water and can be used with phosphoric acid.

American Clay Works offers the finest water soluble fertilizer blends available on the market. We inventory a large variety of formulations to satisfy all growing needs. American Clay distributes both Scotts Company Fertilizers, Scotts Champion, and Peters Water Soluable Fertilizers. The fertilizer section of our catalog provides you with general information on each blend. For more specific data please contact a sales representative at American Clay Works and Supply Company.

Fertilizers

Scotts® Peters® Excel®

Even where water quality is very unfavorable, using the patented Peters® Excel® can give you optimal results. It stabilizes the pH while supplying magnesium and/or calcium and the exclusive M-77 nutrient package developed by Scotts. Excel is easy to use, can be mixed together and reduce the need for multiple stock tanks. Peters Excel is exclusively available from Scotts.

Excel All Purpose (21-5-20) 25 lb.

Code: P14-99-1-17

Contains elevated trace elements. Maintains solubility when calcium and magnesium are added. Use on all potted bedding (including plugs) and cut flowers.

Ingredients: ammonium nitrate, potassium nitrate, urea phosphate, boric acid, copper sulfate, iron sulfate, manganese sulfate, sodium molybdate, zinc sulfate.

Excel Cal-Mag (15-5-15) 25 lb.

Code: P14-94-1-17

Maintains solubility for calcium, magnesium, phosphorus, and sulfated trace elements all in one product. Use on all potted, bedding (including plugs) and cut flowers requiring additional nitrate, calcium and magnesium.

Ingredients: calcium nitrate, potassium nitrate, urea, urea phosphate, magnesium nitrate, boric acid, copper sulfate, iron sulfate, manganese sulfate, sodium molybdate, zinc sulfate.

Excel Poinsettia (20-5-19) 25 lb.

Code: P14-41-1-17

Contains elevated nitrate, zinc and molybdenum. Maintains solubility when calcium and magnesium are added. Use for poinsettias and other holiday crops.

Ingredients: ammonium nitrate, potassium nitrate, urea phosphate, boric acid, copper sulfate, iron sulfate, manganese sulfate, sodium molybdate, zinc sulfate.

Supplements:

Excel Cal-Lite (15-0-0) 25 lb.

Code: P15-0-0

Addresses specific crop and water needs. Use with Peters Excel for additional calcium.

Do not mix Cal-Lite 15-0-0 with fertilizers that contain ammonium phosphates, potassium phosphates, or epsom salts (magnesium sulfate), such as Peters Professional Water Soluble Fertilizers or other brands.

Ingredients: calcium nitrate, boric acid, copper EDTA, iron DTPA, manganese EDTA, sodium molybdate, zinc EDTA.

Excel Magnitrate (10-0-0) 25 lb.

Code: P14-42-1-17

Addresses specific crop and water needs. Use with Peters Excel for additional magnesium. Magnitrate 10-0-0 is compatible with calcium nitrate and may be added in the same concentrate. Magnitrate 10-0-0 is used to supplement magnesium and as a starting level apply 22.5 ppm mg. each watering.

Ingredients: magnesium nitrate, boric acid, copper EDTA, iron DTPA, manganese EDTA, sodium molybdate, zinc EDTA.

EXCEL 21-5-20, 20-5-19, and 15-5-15 are complete water soluble fertilizers designed for used in constant or periodic liquid feeding programs for the production of all greenhouse and nursery crops, including plugs and transplants.

EXCEL 15-0-0 CAL-LITE and 10-0-0 MAGNITRATE are for use as supplemental fertilizers to address specific crop needs for additional calcium and/or magnesium.

Packaging: 25 pound bags

American Clay Works & Supply Company - 1-800-873-2297

Scotts® Peters® Professional®

When you want highly effective water soluble fertilizers that you can apply to either foliage or in irrigation water, you want Peters® Professional®. Made with the highest quality ingredients and Scotts exclusive M-77 package, Peters Professional offers crop specific, general purpose and Peat-Lite® formulas that are just right for your crops.

S.T.E.M. (Soluble Trace Element Mix) 25 lb.

Code: P14-03-3-00

An immediately available, soluble, easy to apply trace element complex. Contains sulfur, boron, copper, iron, manganese molybdenum and zinc. Apply with proper cautions.

USES: To correct a suspected trace element deficiency. In constant feeding, apply 8 oz. of S.T.E.M. for every 100 lbs. of fertilizer.

Blossom Booster (10-30-20) 25 lb.

Code: P14-15-1-17

Designed to increase bud set, count, color and size on virtually all types of flowering material. Use recommended only during periods of heavy bud set.

Hi-Phos Special (15-30-15) 25 lb.

Code: P14-01-1-17

The original soluble fertilizer formula. Especially useful in low phosphorus media. Excellent for crops responding to additional phosphorus. An ideal plant starter (high phosphorus analysis). Accentuates color and ties up aluminum in pink hydrangeas.

Tropical Foliage Feed (24-8-16) 25 lb.

Code: P14-93-1-17

New mix with no blue dye. Ideal for indoor plants.

Plant Starter (8-45-15) 25 lb.

Code: P91140W

Designed primarily as a plant starter whose main use is in fertilizing young seedling transplants, newly set rooted cuttings, etc.

Poinsettia Finisher (15-20-25) 25 lb.

Code: P14-05-1-17

A new Peat Lite formulation for finishing Poinsettias.

Scotts® Peters® Professional® Peat-Lite®

When you use soilless growing media, you need just the right fertilizers. Scotts has the answer: Peters® Professional® Peat-Lite®. With elevated micronutrients and the Scotts exclusive M-77 nutrition package, Peters Professional Peat-Lite will keep your crops healthy.

Peat-Lite 15-16-17 - 25 lbs.

Code: P14-22-1-17

A popular fertilizer containing 53% nitrate nitrogen. Being a Peat-Lite blend it contains elevated trace element quantities. This formulation is one of the best 1:1:1 ratio fertilizers available to the grower.

Peat-Lite 20-10-20 - 25 lbs.

Code: P14-86-1-17

This fertilizer has the same formulation as 20-10-20 General Purpose with the main difference being Peat-Lite contains an elevated trace element package. This blend offers a high nitrate to ammonium ratio good for year round production. The acidic nature of this blend counters undesirable water alkalinity.

Fertilizers

Agriform 20-10-5 Planting Tablets

Two year planting tablets for root zone feeding of trees, shrubs and ground covers.

How Agriform Planting Tablets Work:

These compact, easy-to-use fertilizer tablets eliminate the need for measuring small quantities of dry materials and provide a safe, scientifically complete plant food which lasts up to two years. Planting Tablets fill the continuing need of all plants for a full range of major nutrients.

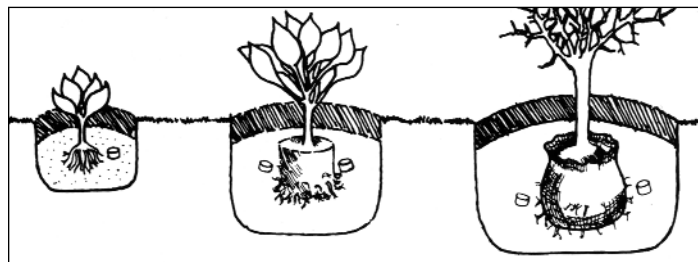
During the first year of establishment, the demand for plant food is not great in terms of pounds of nutrients but continuity of availability is critical for the development of healthy roots and vigorous top growth. Roots completely surround Agriform Planting Tablets to pick up the nutrients that are gradually released by the action of soil bacteria. The absorbed nutrients are transported throughout the plant by the sap stream.

Note: these tablets do not dissolve; consequently, tablets may retain their shape even after a year or two in the soil, while releasing nutrients at the desired rate.

Urea-formaldehyde is the total nitrogen source, supplying a reservoir of prolonged-release, nonleaching nitrogen to the plant roots. Adequate quantities of available phosphorus, potassium, and iron complete the formula and provide an ample reserve of all major elements. Soil bacteria acting on the surface of the tablets gradually convert the slow-release nutrients to a form that can be absorbed by the roots. The rate of conversion varies with the soil temperature, just as a plant's requirement for nitrogen varies with the season of the year.

Special Advantages

- Safe easy to handle, convenient.
- Agriform Planting Tablets feed for up to two years in warm climates. This reduces labor and materials for re-applications.
- The simplicity of premeasured tablets insures uniform and adequate fertilization.
- Supervisory time is reduced. Count and placement of tablets can easily be verified by inspection after installation.
- Root zone placement eliminates feeding surface rooted weeds and grass. No surface residue to wash away.
- Leach resistant properties of tablets protect underground water from pollution.



Specifications

Description: Planting tablets shall be tightly compressed, longlasting and slow-release. Weights of 5, 10 and 21 grams with an analysis of 20-10-5 derived from the sources listed in the guaranteed analysis.

New landscape plantings in the ground: Bareroot, B&B, container stock and ground cover liners. Position plant in the hole. Backfill halfway up the root ball. Place tablet(s) beside the root ball about 1 inch from root tips. Do not place tablet(s) in bottom of the hole. Complete backfill, tamp and water.

Interior and outdoor landscaping in containers and tubs: Punch one hole for each tablet 2 to 3 inches inboard of the container rim, and 4 to 6 inches deep. Insert tablet(s), close holes.

Established trees and shrubs in landscape: Insert 21 gram tablets in holes around dripline and between dripline and trunk. Drill or punch holes 6 to 8 inches deep.

Code	Size	Tab. / Cs.	Wt. / Cs.
AT6460	10 gram 20-10-5	1000	25 lbs.
AT6491	21 gram 20-10-5	500	25 lbs.

21 - Gram			10 - Gram		
1 gallon can plants	3 gallon can plants	5 gallon can plants	7 gallon can plants	Established plantings or plants in large tubs or boxes	Well rooted liners
1 tablet	1 to 2 tablets	2 to 3 tablets	3 to 5 tablets	1 tablet for each 1/2 inch of tree trunk diameter per each foot of height or spread	1 to 2 tablets

Fertilizers

Scotts® Osmocote®

Osmocote® is the original brand of controlled release fertilizers, introduced in the late 1960s. These products provide NPK (only) in several unique longevities. For information about container size fill rates please refer to product label.

Longevity - at the following Average Media Temperature						
Product	Code	60°	70°	80°	90°	
14-14-14	OS7090	4-5 Months	3-4 Months	2-3 Months	1-2 Months	
13-13-13	OS7051	9-10 Months	8-9 Months	6-7 Months	5-6 Months	
19-6-12	OS7290	4-5 Months	3-4 Months	2-3 Months	1-2 Months	
18-6-12	OS7210	9-10 Months	8-9 Months	6-7 Months	5-6 Months	
18-6-12 Fast Start	OS7211	9-10 Months	8-9 Months	6-7 Months	5-6 Months	
17-7-12	OS7170	14-16 Months	12-14 Months	8-9 Months	7-8 Months	
Guaranteed Analysis	14-14-14	13-13-13	19-6-12	18-6-12	18-6-12 F.S.	17-7-12
Total Nitrogen	14.0%	13.0%	19.0%	18.0%	18.0%	17.0%
Ammoniacal Nitrogen	8.2%	7.6%	10.0%	9.7%	9.7%	9.1%
Nitrate Nitrogen	5.8%	5.4%	9.0%	8.3%	8.3%	7.9%
Available Phosphate (P₂O₅)	14.0%	13.0%	6.0%	6.0%	6.0%	7.0%
Soluable Potash (K₂O)	14.0%	13.0%	12.0%	12.0%	12.0%	12.0%

Scotts® Osmocote® Plus

Since the mid-1990s, growers have relied on the even nutrient release of Osmocote® Plus. These products help prevent deficiency symptoms by providing controlled release micronutrients in conjunction with nitrogen, phosphorous and potassium.

Longevity - at the following Average Media Temperature			
60°	70°	80°	90°
4-5 Months	3-4 Months	2-3 Months	1-2 Months
9-10 Months	8-9 Months	6-7 Months	5-6 Months
4-5 Months	3-4 Months	2-3 Months	1-2 Months
9-10 Months	8-9 Months	6-7 Months	5-6 Months
9-10 Months	8-9 Months	6-7 Months	5-6 Months
14-16 Months	12-14 Months	8-9 Months	7-8 Months

Guaranteed Analysis	15-9-12	15-9-11
Code	OS7093	OS7095
Total Nitrogen	15.0%	15.0%
Ammoniacal Nitrogen	7.0%	7.0%
Nitrate Nitrogen	8.0%	8.0%
Available Phosphate (P₂O₅)	9.0%	9.0%
Soluable Potash (K₂O)	12.0%	11.0%
Magnesium (Mg)	1.0%	1.0%
Sulphur (S)	2.3%	2.3%
Boron (B)	0.02%	0.02%
Copper (Cu)	0.05%	0.05%
Iron (Fe)	0.45%	0.45%
Chelated Iron (Fe)	0.23%	0.23%
Manganese (Mn)	0.06%	0.06%
Molybdenum (Mo)	0.02%	0.02%
Zinc (Zn)	0.05%	0.05%

Guaranteed Analysis	19-5-8
Total Nitrogen	19.0%
Ammoniacal Nitrogen	6.6%
Nitrate Nitrogen	5.6%
Urea Nitrogen	6.8%
Available Phosphate (P₂O₅)	5.0%
Soluable Potash (K₂O)	8.0%
Magnesium (Mg)	1.4%
Water Soluable Mg	0.28%
Sulphur (S)	7.0%
Combined S	4.4%
Free S	3.6%
Copper (Cu) Total	0.05%
Soluable Cu	0.01%
Iron (Fe)	0.90%
Soluable Fe	0.68%
Manganese (Mn)	0.25%
Water Soluable Mn	0.10%
Zinc (Zn) (Soluable)	0.10%

Scotts® Osmocote® Pro

Osmocote® Pro was developed for nursery growers with flexibility in mind. Growers can choose from a wide variety of NPK and minor element formulations to fit almost any crop needs.

Longevity - at the following Average Media Temperature					
Product	Code	60°	70°	80°	90°
19-5-8	OS1316	9-10 Months	8-9 Months	6-7 Months	5-6 Months
21-3-7	OS1506	14-16 Months	12-14 Months	8-9 Months	7-8 Months
21-4-7	OS1508	9-10 Months	8-9 Months	6-7 Months	5-6 Months

Fertilizers

17-6-12 Plus Minors Controlled Release Nutrients

3-4 month term at 70 degrees F average soil temperature.

ITEM NO. SB7150

DIRECTIONS FOR USE:

Sensitive Plants: Rhododendron, Azalea, Heather, Fern, Orchid, etc. Use low rate.

Nursery Stock: Liners, container grown woody ornamentals, field beds. Use medium rate.

Greenhouse Crops or Nursery Stock: Rose, Carnation, Euonymus, Dracaena, Oleander, Eucalyptus, Pyracantha, etc. Use high rate for rapidly growing, salt tolerant plants grown under optimum conditions.

Soil Sterilization: Product should always be incorporated in the soil mix after steaming.

Storage of Mixes Containing This Product: Since the moisture contained in most planting mixes will cause a gradual release of nutrients, this product should always be applied within 2 weeks after preparation and then only after a heavy irrigation.

Incorporating Application Rate

Volume or Area of Mix	Low	Medium	High
	Sensitive Plants	Nursery Stock	Greenhouse or Nursery Stock
per cubic foot	2 oz.	4 oz.	6 oz.
per cubic yard	3 lbs.	6 lbs.	10 lbs.
per cubic meter	2 kg.	4 kg.	6 kg.
per 100 sq. ft. (to 6" depth)	6 lbs.	12 lbs.	19 lbs.
per sq. meter (to 15 cm depth)	0.25 kg.	0.5 kg.	0.9 kg.

Top-Dressing Application Rate

Container size Top-dressing on established plants	Approx. No. Containers Per Cubic Foot	Volume or Low	Medium	High
		Sensitive Plants	Nursery Stock	Grnhse or Nursery Stock
5" Std Rd. Pot	800	2 g	4 g	6 g
6" Std Rd Pot	450	3 g	6 g	10 g
1 Gal. Cont.	300	5 g	9 g	15 g
3 Gal. Cont.	80	20 g	40 g	60 g
5 Gal. Cont.	50	25 g	50 g	90 g

17-6-10 Plus Minors Controlled Release Nutrients

8-9 month term at 70 degrees F average soil temperature.

ITEM NO. SB7140

DIRECTIONS FOR USE:

Sensitive Plants: Rhododendron, Azalea, Heather, Fern, Orchid, etc. Use low rate.

Nursery Stock: Liners, container grown woody ornamentals, field beds. Use medium rate.

Greenhouse Crops or Nursery Stock: Rose, Carnation, Euonymus, Dracaena, Oleander, Eucalyptus, Pyracantha, etc. Use high rate.

Soil Sterilization: Product should always be incorporated in the soil mix after steaming.

Storage of Mixes Containing This Product: Since the moisture contained in most planting mixes will cause a gradual release of nutrients, this product should always be applied within 2 weeks after preparation and then only after a heavy irrigation.

Dibble Application: This product can be dibbled or placed directly at the bottom of the planting hole. Use only well rooted 2 1/4" or larger woody ornamental and foliage liners and the medium top-dress rate recommendations. The dibble method should be tried on a small scale initially if this is a new practice.

Incorporating Application Rate

Volume or Area of Mix	Low	Medium	High
	Sensitive Plants	Nursery Stock	Greenhouse or Nursery Stock
per cubic foot	4 oz.	6 oz.	8 oz.
per cubic yard	7 lbs.	10 lbs.	13 lbs.
per cubic meter	4 kg.	6 kg.	8 kg.
per 100 sq. ft. (to 6" depth)	13 lbs.	19 lbs.	25 lbs.
per sq. meter (to 15 cm depth)	0.5 kg.	0.7 kg.	0.9 kg.

Top-Dressing Application Rate

Container size Top-dressing on established plants	Approx. No. Containers Per Cubic Foot	Volume or Low	Medium	High
		Sensitive Plants	Nursery Stock	Grnhse or Nursery Stock
5" Std Rd. Pot	800	4 g	6 g	8 g
6" Std Rd Pot	450	7 g	10 g	13 g
1 Gal. Cont.	300	10 g	15 g	20 g
3 Gal. Cont.	80	40 g	60 g	80 g
5 Gal. Cont.	50	60 g	90 g	120 g

Fertilizers

Osmocote Pro with Uncoated NPK and Fe 19-7-10 3 to 4 months

Engineered for short term foliage and container crops.
ITEM NO. SB7341

Osmocote Pro with Uncoated NPK and Fe 18-7-10 8 to 9 months

Designed for longer term foliage and container stock. Ideal for "once a season" feeding.
ITEM NO. SB7250

Osmocote Pro with Uncoated NPK and Fe 17-7-10 12 to 9 months

The longest lasting formulation for year round feeding of container and foliage stock.
ITEM NO. SB7160

Longevity is based on 70 degrees F average soil temperature:
Sierrablen releases nutrients evenly over the specified longevity, which is based on 70 F (21C) average soil temperature. Shorter terms can be expected in warmer growing conditions, longer terms in cooler growing conditions.

Sierrablen comes in 50 pound bags.
Following chart is for all three Sierrablen formulations.

HIGH N + Minors 24-4-9 • (5 to 6 months)	
Controlled Release Fertilizer	
Total Nitrogen (N)*	22%
7.0% ammoniacal nitrogen	
6.2% nitrate nitrogen	
8.8% urea nitrogen	
Available Phosphate (P ₂ O ₅)*	4%
Soluble Potash (K ₂ O)*	9%
Magnesium (Mg) (Total)	1%
0.25% Water Soluable Magnesium (Mg)	
Sulfur (S) (Combined)	3%
Boron (B)	0.02%
Copper (Cu) (Soluble)	0.05%
Iron (Fe) (Soluble)	1%
Manganese (Mn) (Total)	0.10%
0.10% Water Soluable Manganese (Mn)	
Molybdenum (Mo)	0.001%
Zinc (Zn) (Soluable)	0.05%

Low Sensitive Plants	Medium Nursery Stock	High Greenhouse/Crops
2 g	3 g	5 g
4 g	6 g	9 g
6 g	9 g	14 g
20 g	30 g	50 g
40 g	60 g	90 g
Low Sensitive Plants	Medium Nursery Stock	High Greenhouse/Crops
4 g	6 g	8 g
7 g	10 g	13 g
10 g	15 g	20 g
40 g	60 g	80 g
60 g	90 g	120 g
Low Sensitive Plants	Medium Nursery Stock	High Greenhouse/Crops
5 g	7 g	10 g
9 g	13 g	17 g
14 g	20 g	26 g
50 g	75 g	100 g
80 g	120 g	160 g

Container size top-dressing on established plants	Approximate number of containers per cubic yard
5" Standard round pot	800
6" Standard round pot	450
1 gallon container	300
3 gallon container	80
5 gallon container	50

Derived From: Ammonium Nitrate, Ammonium Phosphate, Urea, Calcium Phosphate, Potassium Sulfate, Magnesium Oxide, Magnesium Sulfate, Sodium Borate, Copper Sulfate, Ferrous Sulfate, Manganese Sulfate, Sodium Molybdate and Zinc Sulfate.

* The Nitrogen, Phosphorus and Potassium sources have been coated to provide 19% coated slow-release Nitrogen (N), 3% coated slow-release phosphate (P₂O₅) and 7% coated slow-release Potash (K₂O).

High N + Minors 22-4-9 is composed of granules of dry nutrients which have been encapsulated within multiple layers of polymetric resin. Water vapor penetrates the permeable shell and dissolves the nutrient core. The resulting osmotic pressure within the granule meters the liquid nutrients through the coating and into the surrounding soil/media.

Incorporating Application Rate

Volume of Area Mix	Low	Medium	High
Per cubic ft (oz)	2.0	3.5	5.5
Per cubic yd (oz)	3.5	5.5	9.5
Per cubic mt (kg)	2.0	3.5	5.5
Lb per 100 sq ft (to 6" depth)	6.5	10.5	17.5
Kg. per square meter (to 15 cm depth)	0.3	0.5	0.8

Top-dressing application rate

Container Size	Apx # Containers per Cubic Yard	Low	Medium	High
5" Standard	800	2 g	3 g	5 g
6" Standard	450	4	6	10
1 gallon	300	5	8	14
2 gallon	140	11	18	31
3 gallon	80	20	31	54
5 gallon	50	32	50	86
7 gallon	35	45	71	123

Fertilizers

Growth Products

X-Xtra Iron 9% - High Iron 9% - Low Nitrogen 6%

Guaranteed Analysis:

Total Nitrogen (N)	6%
6% Urea Nitrogen	
Sulfur (S)	4%
4% Combined Sulfur (S)	
Iron (Fe)	9%
9% Chelated Iron (Fe)	
Derived From: Technical Grade Low Biuret Urea, Ferrous Sulfate	
Cheating Agent: Citric Acid	
Weight per gallon	11.24 lbs.
Freezing temperature	32 F

Product Description:

X-Xtra Iron 9% is a crystal clear solution. It is the highest percentage of 100% chelated iron in the industry. X-Xtra Iron 9% is ideal for both foliar and root applications where high iron is needed. The low nitrogen to iron ratio is preferable to avoid excess flush growth. The unique citric-acid chelate is quickly absorbed through leaf tissue, correcting deficiencies and producing a healthy green color.

Cal Mag Max - 7-0-3

Guaranteed Analysis:

Total Nitrogen (N)	7%
7% Nitrate Nitrogen	
Soluble Potash (K ₂ O)	3%
Calcium (Ca)	4%
4% Chelated Calcium (Ca)	
Magnesium (Mg)	2%

Product Description:

Cal Mag Max is Growth Products' fertilizer designed specifically to satisfy the special needs of plugs and other plants grown in soilless media. This product breaks the barriers between fertilizers and micronutrients, giving you the best of both. Cal Mag Max contains the perfect 2 to 1 ratio of calcium to magnesium. The calcium and magnesium are 100% chelated with a special sugar-acid chelate.

Calcium Chelate 8% - 6-0-0

Guaranteed Analysis:

Total Nitrogen (N)	6%
3.2% Urea Nitrogen	
2.8% Nitrate Nitrogen	
Calcium (Ca)	8%
8% Chelated Calcium (Ca)	
Derived From: Technical Grade Low Biuret Urea, Calcium Nitrate.	
Cheating Agent: Citric Acid	
Weight per gallon	10.21 lbs.
Freezing temperature	32 F

Product Description:

Calcium Chelate is the lifeline for premium plant health. Behind nitrogen and potassium, calcium represents the next greatest content of a plants tissue. Calcium Chelate may be used as completely soluble alternative to gypsum and limestone. It may also be used instead of lime to raise the pH level. Calcium Chelate is completely soluble and chelated, which means there is no lag time for the product to break down and become available to the plant.

Essential Plus

Natural Rooting Hormone & Biostimulant

Guaranteed Analysis:

Based On Active Ingredients:

Humic Acid	7%
Cellulose Fiber	10%
Natural Rooting Hormone	0.1%
Kelp Extract	0.1%
Carbohydrates	2%
Natural Wetting Agent	0.0025%
Lignin	1.2%
Mono / Disaccharides	3%
Ash Content	2%

0.08% Phenylalanin	Trace% Cystine	0.19% Proline
0.07% Isoleucine	Trace% Beta-Alanine	0.17% Leucine
0.04% Histidine	Trace% Taurine	0.16% Lysine
0.02% Methionine	0.53% Glycine	0.16% Serine
0.01% Tyrosine	0.39% Glutamic Acid	0.12% Arginine
Trace% Carnosine	0.35% Aspartic Acid	0.10% Threonine
Trace% Citrulline	0.26% Alanine	0.10% Valine

Total Amino Acid	2.75%
Riboflavin (B2)	12.17 mg/lb
Vitamin (B6)	0.314%

Derived From: Humic Acid (Potassium Humate), Plant Extracts, Simple and Complex Sugars, North Atlantic Kelp Extract (Ascophyllum nodosum), Hydrolyzed Organic Proteins, Natural Wetting Agent and Carbohydrates

Weight per gallon 8.74 lbs.

Product Description:

Essential Plus provides a safe alternative to the use of chemical hormones like IBA and NAA for the propagation of cuttings. Essential Plus is a true organic solution containing several unique ingredients with auxin-like activities known to stimulate callus formation and rooting on softwood and hardwood cuttings. Essential Plus contains humic acid derived from Leonardite, kelp extract, and a proprietary plant extract, which promote rooting. Side by side trials with IBA have proven that Essential Plus produces faster rooting and greater root mass than IBA.

Essential Plus is an easy to use and safe liquid formulation that can be utilized as a dip prior to planting or as a time saving drench. It is pasteurized and free of pathogens. It can be applied through a sprayer, drip irrigation system, or via hand watering, saving many hours of production labor. It contains a safe, non-phototoxic wetting agent derived from the yucca plant, which assures quick penetration into soils that are often to difficult to wet. It is manufactured from only natural organic ingredients, and is labeled by the NOFA as organic.

As an added benefit, Essential Plus promotes other aspects of plant physiology, including photosynthesis, hormonal activity, respiration and ion uptake during the plant's growth cycle. Essential plus contains two ingredients that speed up seed germination. It quickly softens the seed coat, allowing water penetration and faster, more uniform germination even on tough seed coats.

Fertilizers

Triple Ten (10-10-10)

Total Nitrogen (N)	10%
5.5% Urea Nitrogen	
0.5% Ammoniacal Nitrogen	
4.0% Slowly Available Water Soluble Nitrogen*	
Available Phosphate (P2 O5)	10%
Soluble Potash (K2O)	10%
Boron (B)	0.02%
Copper (Cu)	0.05%
0.05% Chelated Copper (Cu)	
Iron (Fe)	0.1%
0.1% Chelated Iron (Fe)	
Manganese (Mn)	0.05%
0.05% Chelated Manganese (Mn)	
Molybdenum (Mo)	0.0005%
Zinc (Zn)	0.05%
0.05% Chelated Zinc (Zn)	

Product Description:

Triple Ten is a concentrated crystal-clear solution containing an equal ratio of N, P, and K, as well as slow release nitrogen. This equal ratio is a staple for green-house and nursery crops. The solution contains 4% slow release nitrogen from our exclusive methylene urea. Methylene urea is known to be a very consistent and reliable nitrogen source that remains present and available to your plants for a longer period of time. Methylene urea is not easily broken down, and its nitrogen will only be released by a combination of factors (heat, humidity, and microbial activity). Timings between fertilizations can be extended. The slow release nitrogen is 'tackified' and is less likely to leach or volatilize. The phosphorus and potassium are completely soluble and therefore immediately available for plant uptake. The methylene urea portion will not break down into ammonia as it becomes available for the plant.

pH Booster 0-0-25 - Liquid Potassium Solution

Guaranteed Analysis:

Soluble Potash (K ₂ O)	25%
Derived From: Potassium Carbonate	

Product Description:

pH Booster is a crystal clear concentrate solution containing a very safe and reliable source of potassium from potassium carbonate. Each gallon of pH booster contains 2.9 lbs. of potassium. It does not contain any chlorides and has the lowest salt index of any potassium source. Potassium deficiencies can be quickly corrected for both greenhouse and nursery crops. It is extremely efficient as a foliar feed to correct potassium deficiencies. Because of 0-0-25's low salt index, the volume of irrigation water can be reduced during the application to avoid over saturation of the soil. For newly planted plants, 0-0-25 can be applied as soon as the seeds have emerged.

As a pH booster, 0-0-25 will adjust both water pH and soil. It is important to check the pH of any mix prior to use. Each soil mix will have a different buffering capacity (resistance to change pH). For example, bark is more resistant than other soil mixes. Be sure to check the pH of your mix after each application. pH Booster can be mixed with lime or flowable lime products to make their slurry more flowable and increase the performance of those products.

It can be applied through overhead irrigation as a foliar spray, or drenched onto the roots. pH Booster crystal clear solution does not settle out as a concentrate or when diluted for use, and therefore provides the precise analysis of nutrients throughout its entire use. A major advantage of pH Booster is that it can be directly siphoned from the original container with a high ratio proportioner.

pH Booster is alkaline, with a pH of 11. As a result, it will raise the pH of your stock tank and will raise the pH of your soils.

American Clay Works & Supply Company - 1-800-873-2297

Micrel Total (5-0-0) - With Nine Chelated Micronutrients

Guaranteed Analysis:

Nitrogen (N)	5%
5% Urea Nitrogen	
Magnesium (Mg)	0.5%
0.5% Water Soluable Magnesium (Mg)	
Sulfur (S)	4%
4% Combined Sulphur	
Boron (B)	0.02%
Copper (Cu)	0.5%
0.5% Chelated Copper (Cu)	
Iron (Fe)	6%
6% Chelated Iron (Fe)	
Manganese (Mn)	0.5%
0.5% Water Soluable Manganese	
Molybdenum (Mo)	0.0005%
Zinc (Zn)	0.5%
0.5% Chelated Zinc (Zn)	
Weight per gallon	11.65 lbs.

Product Description:

Micrel Total is a fully chelated 100% micronutrient package. Micrel Total has a horticulturally correct ratio of magnesium, sulfur, boron, copper, iron, manganese, molybdenum and zinc. The chelation process assures you of completely soluble and available micros that the plant can immediately absorb. Micrel Total can be used to correct deficiencies in all types of greenhouse and nursery crops. It is an ideal product to use when it is not possible to run soil and tissue tests to determine the exact deficiency. Micrel Total is also a great additive to supplement fertilizers lacking micronutrients. Micrel Total can be foliar applied for immediate treatment of chlorotic conditions and is more effective than non-chelated products.

Magnesium Chelate 3% - Organic Sugar-Chelate

Guaranteed Analysis:

Magnesium (Mg)	3%
3% Chelated Magnesium	

Product Description:

Magnesium Chelate 3% is a chelated solution ideal for correcting magnesium deficiencies. This organic sugar-acid chelate is completely soluble and immediately available for the plant to utilize. There is no need to wait for the product to break down and become available. Granular products are highly insoluble and may never become available. Magnesium Chelate 3% contains no excess sulfur which is generally over-applied though granular micronutrient products.

pH Reducer - Citric Acid Solution

Guaranteed Analysis:

Contains non-plant food ingredients	
Citric Acid	50%
Wetting Agent	0.0025%
pH	1.5
Weight per gallon	8.36 lbs.

Product Description:

This natural pH Reducer is a safe alternative to phosphoric and sulfuric acids. Use pH Reducer to lower the pH of the soilless media and water, or as a buffer in the mixing tank. pH Reducer has the extra benefit of chelating micronutrients that may be unavailable in the soil. pH Reducer contains a natural wetting agent to help the citric acid penetrate the soil quickly.