

MoorMan's® GROSTRONG® Minerals for Horses



A Vitamin-Mineral Supplement for All Classes of Horses



GROSTRONG Minerals - Granular	Product Number 641
GROSTRONG Minerals - Block	642
GROSTRONG Minerals - QuadBLOCK®	665
GROSTRONG Precise Minerals - Granular	681
GROSTRONG Precise Minerals - QuadBLOCK	683

Product Positioning

Mineral and vitamin supplementation is necessary for horses for several reasons:

- Required for digestion and utilization of feedstuffs and for most metabolic processes
- Due to mineral depletion of soils, feedstuff nutrient value is lower
- Mineral and vitamin content of forages varies greatly
- Due to vitamin-mineral interactions, these nutrients need to be supplied in the correct amounts and proportions
- To achieve optimum performance

GROSTRONG Minerals provide the necessary minerals and vitamins to complement forages and grains, enabling horses to reach their performance potential. GROSTRONG Minerals are the result of unsurpassed formulation expertise and leading edge technology. Over 100 years of formulation and manufacturing expertise back the reliability and nutritional soundness of GROSTRONG Minerals. Along with good-quality forage, GROSTRONG Minerals provide the cornerstone of FORAGE FIRST® programs. With FORAGE FIRST programs horses can be healthy and perform at their best.

Product Description

GROSTRONG Minerals is a vitamin-mineral supplement for all classes of horses; available in granular form, 25 lb blocks, or 25 lb QuadBLOCK. GROSTRONG Minerals is the vitamin-mineral supplement of choice when feeding low calcium grass forages to horses.

GROSTRONG Precise Minerals is a vitamin-mineral supplement for all classes of horses; available in granular form or 25 lb QuadBLOCK. GROSTRONG Precise Minerals is the vitamin-mineral supplement of choice when more precise control of calcium to phosphorus ratio is desired.

Granular form: Feed free-choice, top-dressed on feed, or incorporated into grain mix.

Block form: Feed free-choice to horses on pasture.

QuadBLOCK form: For in-stall free-choice feeding, use the QuadBLOCK split into fourths.

Features

- Balanced, scientifically formulated complex of 27 minerals and vitamins
- Formulated specifically for horses
- 100+ years of livestock nutrition research and manufacturing experience
- Optimum amounts of vitamins and minerals
- Two formulation options
- Choice of product forms

Benefits

- Ensures horses receive needed major minerals, trace minerals, vitamins and electrolytes in the correct amounts and ratios for maintenance, growth, reproduction, and performance.
- Horse nutrient requirements can be specifically addressed, which allows products to be designed to provide the amounts of vitamins and minerals needed specifically by horses.
- Assures horse owners of commitment to ensuring high-quality products that perform
- Enables horses to reach their genetic potential by providing key vitamins and minerals lacking in feedstuffs.
- Tailors the mineral program to more closely match feeding program requirements.
- Matches feeding situation with best form of product, making supplementation easy.



For equine technical information or assistance: Call our Equine HELPLINE at 1-800-680-8254 or check ADM Alliance Nutrition's Equine Web site: www.grostrong.com.

Product Form/Packaging

GROSTRONG Minerals: 25 lb bag granular form; 25 lb block; or 25 lb QuadBLOCK. (A 50 lb bag of granular minerals is available to Sales Representatives.)

GROSTRONG *Precise* Minerals: 25 lb bag granular form; 25 lb QuadBLOCK.

How Much is Needed

• 1 to 3 oz per horse daily (see Instructions for Feeding).

Guaranteed Analysis

	GROSTRONG Minerals	GROSTRONG <i>Precise</i> Minerals
Calcium (Ca), min./max.	15.2-18.2%	11.0-13.2%
Phosphorus (P), min.	8.0%	10.0%
Salt (NaCl), min./max.	26.0-31.0%	26.0-31.0%
Copper (Cu), min.	3600 ppm	3600 ppm
Selenium (Se), min.	36 ppm	36 ppm
Zinc (Zn), min.	11,500 ppm	11,500 ppm
Vitamin A, min.	300,000 IU/lb	300,000 IU/lb
Vitamin D ₃ , min.	30,000 IU/lb	30,000 IU/lb
Vitamin E, min.	850 IU/lb	850 IU/lb

Ingredients: GROSTRONG Minerals*

Salt, Defluorinated Phosphate, Calcium Carbonate, Monocalcium Phosphate, Dicalcium Phosphate, Dehulled Soybean Meal, Vegetable Oil, Maize Syrup, Zinc Oxide, Magnesium Oxide, Manganous Oxide, Copper Sulfate, Iron Oxide, d-alpha Tocopherol Acetate (Source of Vitamin E), Ferrous Sulfate, Vitamin A Acetate, Calcium Pantothenate, Thiamine Mononitrate, Riboflavin Supplement, Niacin Supplement, Cobalt Carbonate, Sodium Selenite, Cholecalciferol (Source of Vitamin D₃), Potassium Iodide, Vitamin B₁₂ Supplement, Menadione Dimethylpyrimidinol Bisulfite (Source of Vitamin K Activity), Natural and Artificial Flavors.

*The block forms do not contain Natural and Artificial Flavors; blocks contain Lignin Sulfonate.

Ingredients: GROSTRONG *Precise* Minerals*

Monocalcium Phosphate, Dicalcium Phosphate, Salt, Defluorinated Phosphate, Calcium Carbonate, Dehulled Soybean Meal, Maize Syrup, Vegetable Oil, Zinc Oxide, Magnesium Oxide, Manganous Oxide, Copper Sulfate, Iron Oxide, d-alpha Tocopherol Acetate (Source of Vitamin E), Vitamin A Acetate, Calcium Pantothenate, Thiamine Mononitrate, Riboflavin Supplement, Niacin Supplement, Corn Distillers Dried Grains with Solubles, Cobalt Carbonate, Sodium Selenite, Cholecalciferol (Source of Vitamin D₃), Potassium Iodide, Vitamin B₁₂ Supplement, Menadione Dimethylpyrimidinol Bisulfite (Source of Vitamin K Activity), Natural and Artificial Flavors.

*The block form does not contain Corn Distillers Dried Grains with Solubles and Natural and Artificial Flavors; block contains Lignin Sulfonate.

Questions & Answers

1. Q. What are GROSTRONG Minerals for Horses products?
A. GROSTRONG Minerals products are complete and balanced vitamin-mineral supplements specifically formulated for horses and ponies of all ages.
2. Q. Are any other supplementary vitamins or minerals needed in addition to GROSTRONG Minerals?
A. No. When consumed at the recommended rate as part of a FORAGE FIRST program, GROSTRONG Minerals provide adequate minerals and salt for horses under average conditions. However, when horses are worked hard, a considerable amount of salt may be lost through sweating. In these situations, salt should be provided free-choice in addition to GROSTRONG Minerals.
3. Q. Where should GROSTRONG Minerals be located when fed free-choice?
A. GROSTRONG Minerals should be placed near watering or feeding areas, protected from rain.
4. Q. How much GROSTRONG Minerals should a horse consume?
A. Many variables (such as size, age, condition, ration, activity, etc.) can affect the consumption rate of GROSTRONG Minerals. Consumption will typically range from 1 to 3 oz per horse daily (approximately 3 to 5 lb per month) for the average horse. See Instructions for Feeding for more information.
5. Q. Under what type of production situations should GROSTRONG *Precise* Minerals for Horses be fed?
A. GROSTRONG *Precise* is the preferred product to use when the diet is high in calcium (for example, with an alfalfa-based diet) or when more phosphorus is needed (during growth or breeding, for example).

Functions of Minerals and Vitamins are listed on page 6.

Instructions for Feeding GROSTRONG Minerals for Horses

MoorMan's GROSTRONG Minerals for Horses, a cornerstone of FORAGE FIRST feeding programs, provide 27 vitamins, minerals, and electrolytes in a proprietary formula balanced for horses. Feed MoorMan's GROSTRONG Minerals for Horses by the following methods:

GRANULAR PRODUCT No. 641

FREE-CHOICE: When starting to feed, remove salt and other mineral products and feed GROSTRONG Minerals free-choice near the water source and, preferably, protected from rain. Monitor intake to determine that the recommended amounts of Minerals are consumed.

MIXED WITH FEED: For horses expected to consume 5 lb of concentrate mix per horse daily, add 50 lb of granular GROSTRONG Minerals for Horses per ton of mix. For horses expected to consume 10 lb of concentrate mix per horse daily, add 25 lb of granular GROSTRONG Minerals for Horses per ton of mix, etc.

TOP-DRESSED OVER FEED: For concentrate mixes not containing GROSTRONG Mintrate, feed GROSTRONG Minerals as follows: (1 oz is 2 level tablespoons):

Age and Work Load of Horse	Daily Amount of GROSTRONG Minerals
Foal	1 oz
Yearling or 2-year old	2 oz
Pony	1 oz
Bred mare or stallion	3 oz
Lactating mare	3 oz
Pleasure or show horse	2 oz
Moderate to hard-working horse	3 oz*
Race or performance horse	3 oz*

*Additional salt should be offered to hard-working horses to offset losses through perspiration.

Consumption of GROSTRONG Minerals for Horses will vary according to: individual mineral appetites; total dry matter consumption; kind, quality, and amount of hay or pasture available; amount of GROSTRONG Mintrate fed; kind, quality, and amount of concentrate fed; mineral content of drinking water; and condition, size, and age of horse.

CAUTION: Consumption of this product by sheep and goats may result in copper toxicity. Follow label directions. Feeding added selenium at levels in excess of 0.3 ppm in the total diet is prohibited.

BLOCK PRODUCT No. 642

When starting to feed, remove other salt and mineral products and feed GROSTRONG Mineral Block for Horses free-choice. Feed continuously near horses' source of water and, preferably, protected from rain.

When consumed in the recommended amounts, GROSTRONG Mineral Block will supply adequate minerals and salt for horses under average conditions. Horses at moderate to heavy work should also be offered salt free-choice due to heavy salt losses in perspiration. Should consumption of the GROSTRONG Mineral Block be less than recommended, change to granular form, provide mineral in several locations, or locate near water supply. Should consumption of the GROSTRONG Mineral Block be more than recommended, feed salt beside GROSTRONG Mineral Block for Horses, move the blocks to areas less frequented by horses, or remove the block.

Age and Work Load of Horse	Recommended Consumption Lb per Month (per head)
Foal	1.9
Yearling or 2-year old	3.8
Pony	1.9
Bred mare or stallion	5.6
Lactating mare	5.6
Pleasure or show horse	3.8
Moderate to hard-working horse	5.6*
Race or performance horse	5.6*

*Additional salt should be offered to hard-working horses to offset losses through perspiration.

Consumption of GROSTRONG Mineral Block will vary according to: individual mineral appetites; total dry matter consumption; kind, quality, and amount of hay or pasture available; amount of GROSTRONG Mintrate fed; kind, quality, and amount of concentrate fed; mineral content of drinking water; and condition, size, and age of horse.

CAUTION: Consumption of this product by sheep and goats may result in copper toxicity. Follow label directions. Feeding added selenium at levels in excess of 0.3 ppm in the total diet is prohibited.

QuadBLOCK PRODUCT No. 665

When starting to feed, remove other salt and mineral products and feed GROSTRONG QuadBLOCK Minerals for Horses free-choice. The QuadBLOCK may be broken into four quarters. Feed one quarter per horse. Feed continuously near a source of water and, preferably, protected from heavy rain.

When consumed in the recommended amounts, GROSTRONG QuadBLOCK will supply adequate minerals and salt for horses under average conditions. Horses at moderate to heavy work should also be offered salt free-choice due to heavy salt losses in perspiration. Should consumption of the GROSTRONG QuadBLOCK be less than recommended, change to GROSTRONG Minerals for Horses granular form, provide mineral in several locations, or locate near water supply. Should consumption of the GROSTRONG QuadBLOCK be more than recommended, feed salt beside the GROSTRONG QuadBLOCK, move the QuadBLOCK to areas less frequented by horses, or remove the block.

Age and Work Load of Horse	Recommended Consumption Lb per Month (per head)	Days per Quarter Block
Foal	1.9	90-100
Yearling or 2-year old	3.8	45-50
Pony	1.9	90-100
Bred mare or stallion	5.6	30-35
Lactating mare	5.6	30-35
Pleasure or show horse	3.8	45-50
Moderate to hard-working horse	5.6*	30-35*
Race or performance horse	5.6*	30-35*

*Additional salt should be offered to hard-working horses to offset losses through perspiration.

Consumption of GROSTRONG QuadBLOCK will vary according to: individual mineral appetites; total dry matter consumption; kind, quality, and amount of hay or pasture available; amount of GROSTRONG Mintrate fed; kind, quality, and amount of concentrate fed; mineral content of drinking water; and condition, size, and age of horse.

CAUTION: Consumption of this product by sheep and goats may result in copper toxicity. Follow label directions. Feeding added selenium at levels in excess of 0.3 ppm in the total diet is prohibited.

Instructions for Feeding GROSTRONG *Precise* Minerals for Horses

MoorMan's GROSTRONG *Precise* Minerals for Horses, a cornerstone of FORAGE FIRST feeding programs, provide 27 vitamins, minerals, and electrolytes in a proprietary formula balanced for horses. Feed MoorMan's GROSTRONG *Precise* Minerals for Horses by the following methods:

GRANULAR PRODUCT No. 681

FREE-CHOICE: When starting to feed, remove salt and other mineral products and feed GROSTRONG *Precise* Minerals free-choice near the water source and, preferably, protected from rain. Monitor intake to determine that the recommended amounts of Minerals are consumed.

MIXED WITH FEED: For horses expected to consume 5 lb of concentrate mix per horse daily, add 50 lb of granular GROSTRONG *Precise* Minerals for Horses per ton of mix. For horses expected to consume 10 lb of concentrate mix per horse daily, add 25 lb of granular GROSTRONG *Precise* Minerals for Horses per ton of mix, etc.

TOP-DRESSED OVER FEED: For concentrate mixes not containing GROSTRONG Mintrate, feed GROSTRONG *Precise* Minerals as follows: (1 oz is 2 level tablespoons):

Age and Work Load of Horse	Daily amount of GROSTRONG <i>Precise</i> Minerals
Foal	1 oz
Yearling or 2-year old	2 oz
Pony	1 oz
Bred mare or stallion	3 oz
Lactating mare	3 oz
Pleasure or show horse	2 oz
Moderate to hard-working horse	3 oz*
Race or performance horse	3 oz*

*Additional salt should be offered to hard-working horses to offset losses through perspiration.

Consumption of GROSTRONG *Precise* Minerals for Horses will vary according to: individual mineral appetites; total dry matter consumption; kind, quality, and amount of hay or pasture available; amount of GROSTRONG Mintrate fed; kind, quality, and amount of concentrate fed; mineral content of drinking water; and condition, size, and age of horse.

CAUTION: Consumption of this product by sheep and goats may result in copper toxicity. Follow label directions. Feeding added selenium at levels in excess of 0.3 ppm in the total diet is prohibited.

QuadBLOCK PRODUCT No. 683

When starting to feed, remove other salt and mineral products and feed GROSTRONG *Precise* QuadBLOCK Minerals for Horses free-choice. The QuadBLOCK may be broken into four quarters. Feed one quarter per horse. Feed continuously near a source of water and, preferably, protected from heavy rain.

When consumed in the recommended amounts, GROSTRONG *Precise* QuadBLOCK will supply adequate minerals and salt for horses under average conditions. Horses at moderate to heavy work should also be offered salt free-choice due to heavy salt losses in perspiration. Should consumption of the GROSTRONG *Precise* QuadBLOCK be less than recommended, change to GROSTRONG *Precise* Minerals for Horses granular form, provide mineral in several locations, or locate near water supply. Should consumption of the GROSTRONG *Precise* QuadBLOCK be more than recommended, feed salt beside the GROSTRONG *Precise* QuadBLOCK, move the QuadBLOCK to areas less frequented by horses, or remove the block.

Age and Work Load of Horse	Recommended Consumption Lb per Month (per head)	Days per Quarter Block
Foal	1.9	90-100
Yearling or 2-year old	3.8	45-50
Pony	1.9	90-100
Bred mare or stallion	5.6	30-35
Lactating mare	5.6	30-35
Pleasure or show horse	3.8	45-50
Moderate to hard-working horse	5.6*	30-35*
Race or performance horse	5.6*	30-35*

*Additional salt should be offered to hard-working horses to offset losses through perspiration.

Consumption of GROSTRONG *Precise* QuadBLOCK will vary according to: individual mineral appetites; total dry matter consumption; kind, quality, and amount of hay or pasture available; amount of GROSTRONG Mintrate fed; mineral content of drinking water; and condition, size, and age of horse.

CAUTION: Consumption of this product by sheep and goats may result in copper toxicity. Follow label directions. Feeding added selenium at levels in excess of 0.3 ppm in the total diet is prohibited.

Functions of Minerals and Vitamins

Nutrient	Function
Calcium	bone; muscle, and heart contraction; blood clotting; enzymes; hormones; nerve function
Phosphorus	bone; energy utilization; metabolism of proteins, fats, nucleic acids
Salt	maintain acid-base balance, osmotic pressure, waste removal, fat and carbohydrate digestion
Copper	formation of hemoglobin, cartilage, bone, elastin, hair pigment, utilization of iron
Selenium	antioxidant, conserves vitamin E, immune function
Zinc	enzymes; hormones; metabolism of proteins, fats, and carbohydrates; immune system; skin; hair
Magnesium	bones and teeth, enzymes, energy metabolism
Manganese	utilization of carbohydrates and fats; cartilage synthesis; bone development; enzymes for growth, reproduction, and lactation
Iron	hemoglobin (oxygen-carrying blood component)
Pantothenic Acid (vitamin B ₅)	protein, carbohydrate, and fat utilization
Thiamine (vitamin B ₁)	carbohydrate metabolism, nerve function
Riboflavin (vitamin B ₂)	energy metabolism, nerve function
Niacin	cellular respiration and metabolism
Cobalt	component of vitamin B ₁₂
Iodine	reproduction, thyroid hormones, metabolism
Cyanocobalamin (vitamin B ₁₂)	production of red blood cells; utilization of carbohydrates, fats, and proteins
Vitamin A	skin, eyes, bone
Vitamin D	proper absorption, transportation, and metabolism of calcium and phosphorus
Vitamin E	antioxidant, immune function, growth, muscle development and function, oxygen transport, red blood cell stability
Vitamin K	blood clotting, bone formation