Pro's Choice Ceramic Properties

Particle Density:	2.62(g/cc) Hummel & Co., Inc.
Bulk Density:	35 lbs. per cubic ft.
pH:	5%-6%
Chemical Composition:	1. SiO2 74%
	2. AL2 03 12%
	3. Fe2 03 5%
	Traces of Zinc, Magnese, Potassium and Magnesium
Particle Distribution:	30/50
Total Pore Volume:	.271 ml/g
Liquid Holding Capacity:	33% measured by weight
Dust Index:	0.59%
Slaking:	4.3%
Breakdown ASTM C-88	5.3% Hummel & Co., Inc.

Pro's Choice Ceramic Packaging Specifications:

50 lb. bags

40 bags per pallet

Available in bulk

pro's choice
SPORTS FIELD PRODUCTS

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CREATE AN IDEAL GROWING MEDIA

pro's choice CERAMIC

PRO'S CHOICE

CERAMIC GRANULES

Relieves Soil Compaction

Controls Localized Dry Spots

Increases Microbial Growth

Allows Water & Oxygen to Penetrate to Root Level

Retains Nutrients & Reduces Leaching

Eliminates Surface Algae

Increases Permeability

Improves Drainage

Create an ideal growing medium with Pro's Choice Ceramic soil conditioners

Pro's Choice Ceramic, a porous ceramic soil conditioner, is manufactured from a unique mineral with high cation exchange capacity and sound structural characteristics. The physical and chemical properties of the mineral are optimized through a two-stage heating process to create a highly stable and uniform ceramic aggregate, similar to sand in shape and size.

Pro's Choice Ceramic is Non-Compactable

The kiln-fired particles that comprise Pro's Choice Ceramic are extremely hard and non-compactable. They add porosity to the soil and help maintain a loose, aerated growing environment. Air-filled pore spaces provided by these hardened particles improve the passage of water and oxygen to the root zone resulting in a vigorous root system and subsequently better top growth.

Pro's Choice Ceramic is Stable

Pro's Choice Ceramic has a high resistance to degradation. The thermally optimized granules are designed and processed to deliver permanent results and will not decompose or break down in the soil. Chemically inert, Pro's Choice Ceramic remains stable in the presence of water, fertilizers, toxic materials, and fluctuating temperatures.

Pro's Choice Ceramic is Absorbent

The superior absorption and cation exchange capabilities of Pro's Choice Ceramic enable it to retain, and efficiently transfer moisture and nutrients to the turf's root system. Especially important during hot, dry periods, Pro's Choice Ceramic is able to provide a water reservoir, which is freely released to the surrounding soil and plant roots. This cycle of absorption and release is repeated indefinitely.

Pro's Choice Ceramic helps produce better turf grass because it works toward satisfying all the conditions that must be met for good root growth. It has the ability to resist compaction, develop a good drainage matrix, improve air exchange and increase retention of moisture and water-soluble nutrients.

Pro's Choice Ceramic soil conditioner improves soil structure, providing the perfect root environment for quality turf grass.

Table 1
Pro's Choice Ceramic Per Unit Volume in Topdressing Mixture

Relative Proportion	Percentage of PC Ceramic in Mix	Bags of PC Ceramic per cubic yard of finished mix
Very light	6%	1 bag
Light	11%	2 bags
Standard	33%	6 bags
Heavy	66%	12 bags

1 bag= 1.5 cubic feet = 216 cubic inches = 6% of one cubic yard

Table 2
Volume Space Available from Aerifying with Various Size Tynes[1]

Diameter of Each Hole	Volume in Each Hole	Total Volume in All Holes After Aerifying	Capacity[2] in Pounds of PC Ceramic for Total Volume of Holes
1/4 inch	0.15 cu. in	15 cu. ft	500 lbs.
3/8 inch	0.33 cu. in	33 cu. ft	1100 lbs.
1/2 inch	0.58 cu. in	61 cu. ft	2000 lbs.
3/4 inch	1.32 cu. in	136 cu. ft	4500 lbs.

[1] Assuming 36 holes per square foot, each hole 3 inches deep, and green area of 5000 square feet.
[2] Even with careful brushing and raking, it is clear that some material will remain in the foliage on the green surface and travel down into the holes.

Table 3
Pro's Choice Ceramic Per Unit Area for Constructing and Rebuilding Greens

		Bags of PC Ceramic Required per 1000 Square Feet for Specified Depth of Mix			
Relative Proportion	Percentage of PC Ceramic in Mix	1″ Depth	3″ Depth	5″ Depth	7″ Depth
Very light	6%	8	25	40	60
Light	11%	17	50	80	120
Standard	33%	34	100	160	240

Table 4
Required Pounds of Pro's Choice Ceramic per Square Yard at Specific Depths

Mix	At 4″	At 6″	At 8″	At 10″	At 12″
10%	10.2 lbs.	15.3 lbs.	20.4 lbs.	25.5 lbs.	30.6 lbs.
20%	20.4 lbs.	30.6 lbs.	40.8 lbs.	51.0 lbs.	61.2 lbs.
30%	30.6 lbs.	45.9 lbs.	61.2 lbs.	76.5 lbs.	91.3 lbs.
40%	40.8 lbs.	61.2 lbs.	81.6 lbs.	102.0 lbs.	122.4 lbs.

9 square feet = 1 square yard

Table 5
Conversions for Pro's Choice Ceramic Usage

Pounds to Cubic Feet			Cubic Feet to Bags		
Quantity of PC Ceramic Pounds	Bags	Equivalent Volume in Cubic Feet	Required Volume in Cubic Feet	Quantity of PC Ceramic Pounds	Bags
50	1	1.5	10	350	7
100	2	3	25	850	17
500	10	15	30	1,000	20
1,000	20	30	60	2,000	40
2,000	40	60	100	3,250	65
5,000	100	150	300	10,000	200
10,000	200	300	500	16,500	330
20,000	400	600	600	20,000	400
30,000	600	900	1,000	33,250	665
60,000	1,200	1,800	1,800	60,000	1,200
100,000	2,000	3,000	3,000	100,000	2,000

1 cubic yard = 27 cubic feet / 920 lbs.

Pro's Choice Ceramic Applications

Pro's Choice Ceramic can be incorporated with topdressing mixes on established greens and tees or as part of a root zone blend for new construction and rebuild projects. It is suggested that aerification be completed prior to topdressing. This opens vertical corridors to the lower layers allowing Pro's Choice Ceramic to be incorporated into the soil quickly.

The amount of Pro's Choice Ceramic added is critical to attaining maximum benefits. Each topdressing mix and construction blend can vary depending on location, sand/soil characteristics, and objectives to be achieved. Pro's Choice recommends obtaining a physical analysis of your current growing medium or what is being considered. This will provide a benchmark from which to address deficiencies related to bulk density, porosity, permeability and moisture retention imbalances.

Topdressing

A typical application consists of 200lbs. of Pro's Choice Ceramic per 1000 sq. ft., mixed with an equal volume of sand. This addition can improve air and water movement in compacted greens. Repeated topdressing applications are required to increase the content of Pro's Choice Ceramic to a level that provides maximum benefits.

Construction/Rebuilding

A typical root zone mix used for constructing and rebuilding greens contains at least 15% Pro's Choice Ceramic by volume. The actual amount incorporated should be based on the results of a soil analysis.

Tables 1-5 will assist in determining the quantity of Pro's Choice Ceramic required to achieve various topdressing and construction mix compositions.