

HYDROPONICS ADVANTAGES WITH ISOLITE®CG

What Is Isolite®CG and How Does It Work?

ISOLITE®CG- Porous Ceramic (Pronounced E -SO-LITE)

ISOLITE®CG is a porous ceramic consisting of up to 74% pore space that conserves water, decreases compaction, increases soil surface resiliency, and favorably affects total soil porosity and oxygen levels. ISOLITE®CG has a positive effect on microbial activity, soil moisture content, soil permeability, nutrient retention, and healthy root growth. It holds water against evaporative and gravitational loss and increases plant-available moisture and oxygen in the root zone, thereby reducing irrigation requirements and promoting the production of healthy root tissue. ISOLITE®CG resists compaction due to traffic and will not be affected by freezing temperatures. It is an extremely stable material and will not shrink, swell, or break down in the soil. It is not a significantly charged particle (electrical conductivity of .1 to .4 mmhos/cm), has no interaction with sodium, and in fact, helps to leach salts from the soil. In addition, ISOLITE has the propensity to buffer soil temperatures. ISOLITE®CG is used for wetland plantings to add optimum pore space and a tremendous amount of surface area (4.6 m²/g (B.E.T method.) High surface area, combined with large enough pores for microbes are the attributes that are needed for a good media for the immobilization of microorganisms. Generally, microbes require pore space diameter > .5 (micron) in which to live. Most of ISOLITE'S pore space diameter is between 1 and 4. Most other porous ceramics have pores that are < .5 . The ISOLITE®CG is the "condominium" for the microbes and the pollutant is the food. ISOLITE®CG creates a good environment for the biological breakdown of pollutants into elemental (simplest) forms.

Hydroponics Production Advantages with ISOLITE®CG

- Chemically inert
- Does not absorb trace nutrients from hydroponics solutions
- Does not add potentially toxic trace elements to nutrient solutions
- Physically stable: Does not breakdown over time
- Micro-porous structure holds large amounts of plant available water and yet allows good aeration
- Uniform size promotes a uniform root-zone environment
- Sizes can be mixed to achieve desired rations of water holding capacity and porosity

ISOLITE's Physical Properties, Characteristics and Architectural Specifications

- Porous Ceramic: Main component is diatomaceous earth
- Specific Surface Area - B.E.T. method - 4.6 m² / g
- Bulk Weight is approximately 850 pounds per cubic yard, or 32 pounds per cubic foot.
- Porosity: 74% (minimum of 70%)

- Chemical Composition

SiO₂: 78%

Al₂O₃: 12%

Fe₂O₃: 5%

All other chemicals present equal less than 5%, CaO <2.0%, MgO, K₂O, NaO and TiO₂

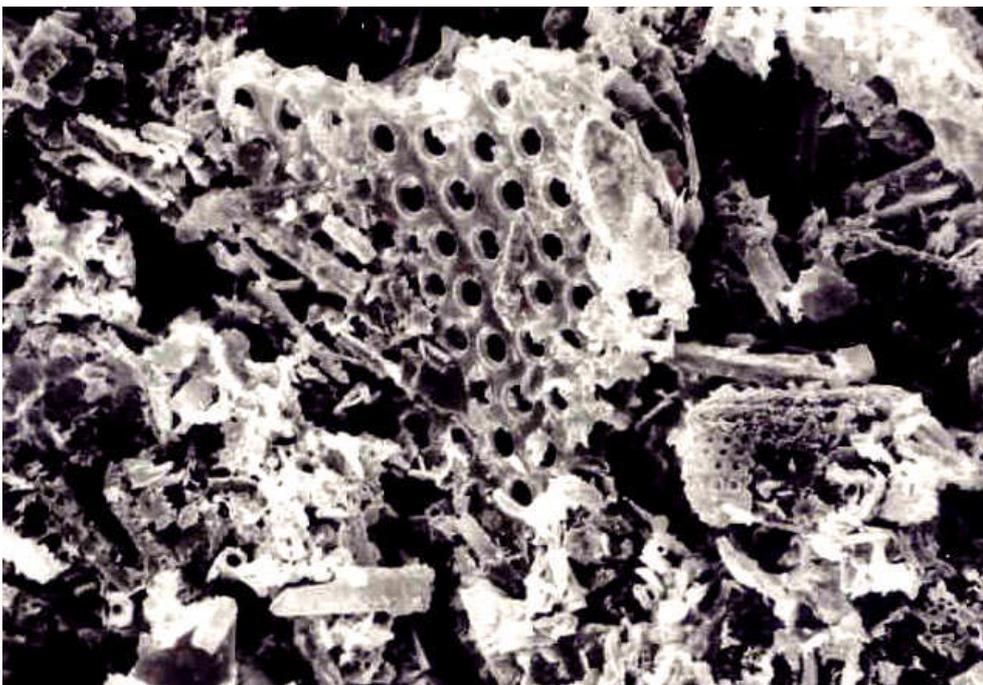
- Pore Size: < 0.5 m = <6% -- .5 to 1 m = 12% -- 1 to 3 m = 43%-- >3 m =39%
- Pore Characteristics: Continuous, open ended and interconnecting (no dead-end pore space)
- Bulk Density: <0.7 g/cc (compared with 1.2g/cc for fired clay, and 1.4g/cc for soil)
- Particle Density: 2.27 (compared with 2.56 for sand)
- Cation Exchange Capacity: <2 meq/100g
- Electrical Conductivity: <0.5 mmhos/cm. (Isolite®CG has no interaction with sodium and is not a significantly charge particle).
- Chemically Inert: Has no direct affect on soil chemistry

Some Typical Isolite®CG Uses

- Hydrophobic soils & localized dry spots
- Anaerobic soils & drainage problem areas
- Pre-mixed topdressing material
- Compacted & high traffic areas
- Drip irrigation
- Sports turf safety / Resiliency management
- Tree Transplanting & Planting - Seeding operations (Colorado Dept. of Transportation specified)



Isolite® CG 2mm



Diatomaceous Earth