

Foremost Environmental Solutions



Office: 303.985.0609

Cell: 720.363.0548

www.foremostsolutions.com

isolite@ix.netcom.com

Lakewood, Colorado



**Isolite@CG**– 2 mm – Environmental  
and Horticultural Uses

## **Isolite@CG (FES US Patent 5,733,067) & Solid Oxygen Source**

### **ISOLITE@CG**

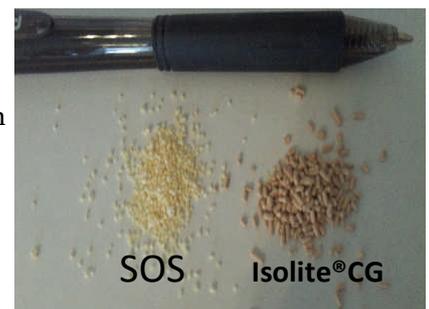
- is an extremely stable porous ceramic
- is produced from diatomaceous earth
- is manufactured in a variety of uniform sizes
- will not break down or migrate in the soil
- has 74% internal pore space
- supports microbial activity
- is an ideal amendment for improving & maintaining challenging soil types (sand, clay, etc.)
- decreases compaction due to traffic
- increases soil surface resiliency
- will not be affected by freezing temperatures
- will not shrink, swell, or break down in the soil
- has the propensity to buffer soil temperatures

### **ISOLITE@CG**

- favorably affects total soil porosity and oxygen levels & soil moisture content
- improves soil permeability
- improves water & nutrient retention
- promotes the production of hearty root tissue
- conserves water use
- holds water against evaporative and gravitational loss
- increases plant-available moisture and oxygen in the root zone
- reduces irrigation requirements
- is not a significantly charged particle (electrical conductivity of .1 to .4 mmhos/cm)
- has no interaction with sodium
- helps to leach salts from the soil

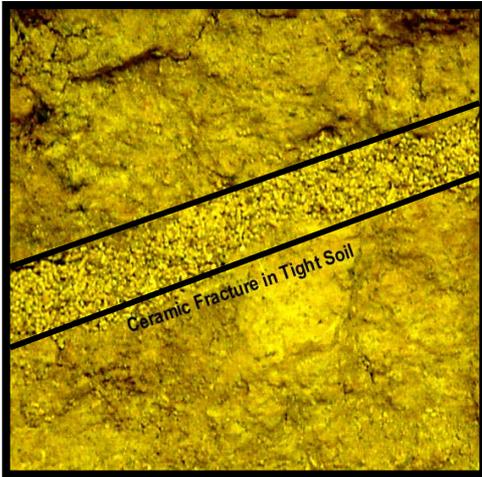
### **Solid Oxygen Source (EPA patent US 7,252,986) FES Has Been Granted Exclusive Rights**

- is made of sodium percarbonate and is coated with a proprietary blend of compounds that produces and slowly releases oxygen
- when applied in the soil with Isolite@CG, the released oxygen will disperse both in the Isolite@CG and the surrounding soil
- creates a long-term super-rich saturation of oxygen in the soil or water, thus establishing robust colonies of biodegrading bacteria



### **Some Typical ISOLITE@CG & SOS Uses**

- in Situ Environmental Clean Up
- 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 & Wyoming DOT specified Yellowstone Nat'l Park)
- other horticultural applications: bonsai, hydroponics, orchids, lawns, rooftop gardens, greenhouse plants, indoor plants
- matrix for the immobilization of microorganisms:
  - biological filtration
    - septic systems
    - wetland construction
    - bio-walls



**Isolite®CG, Porous Ceramic Specifications:**

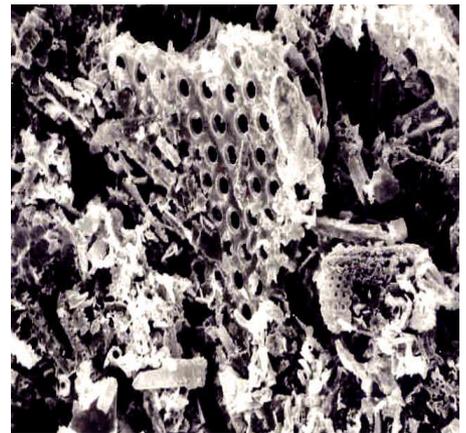
- Total Intrusion Volume (cc/gram) - **0.5786**
- Total Percent Porosity - **74.18**
- Total Surface Area (m<sup>2</sup>/gram) - **20.42**
- Median Pore Diameter Based on volume in Microns - **1.36**
- Bulk Density (g/cc) - **0.512**

**Foremost Environmental Solutions Joint Venture Project with the EPA Using Isolite®CG / SOS Slurry**

**Isolite®CG and SOS** are environmentally friendly products for improving air, soil, and water.

**Properties:**

- Made from **diatomaceous earth** and a small amount of clay particles
- **Chemically inert particle density:** 2.27 (compared to 2.56 for sand)
- **Pore characteristics:** continuous, interconnected and open ended; thereby, permitting easy inoculation with microbes. Because of the internal pores, immobilized microbes are protected from shear kill.
- **Pore size:** 0.1 to 2 microns with 30% being over 1 micron
- **Life expectancy:** Isolite has an indefinite lifetime and can be reused.
- **Steam resistance:** does not break down or soften under steam.



**1 gram of Isolite®CG supports 2 x 10<sup>7</sup> bacteria for colonization**

- Chemical Composition:** (SiO<sub>2</sub> - 78%, Al<sub>2</sub>O<sub>3</sub> - 12%; Fe<sub>2</sub>O<sub>3</sub> - 5%)
  - Specific Surface Area:** 1 gram equals about 21 meters (4.6 m<sup>2</sup>)
  - Bulk weight:** 850 lbs. per cubic yard or 32 lbs. per cubic foot
  - Manufacturing Processes:** extruded for size consistency and dried using proprietary combustion
  - Water Retention:** absorbs and wicks water exceedingly well - does not swell or soften, and water is released slowly and holds oxygen released by SOS.
  - Granular Size (in diameter):** 1 mm (CG-1), 2 mm (CG-2), and CG-R (sand size and shape, not extruded).
- (CG-1, CG-2, & CG-R are the best sizes for environmental and horticultural uses)

