

## Brief Summary / How DiaSource' pore volume/surface area has provided Improved Results

In addition to its purity, the measurable quality that makes DiaSource D.E. more effective, is its greater pore volume/surface area (DiaSource @ 69.05 m<sup>2</sup>/g). (Average pore volume stated by the other D.E. sources range from 1 to 30 m<sup>2</sup>/g). Result: More efficient absorbing/holding capacity.

The architecture of the diatom species found in the DiaSource deposit, with its greater number of pores per individual diatom, creates this exceptional pore volume. Note: Due to these differences, DiaSource works more effectively as an insecticide (one of our major areas of focus). This extraordinary surface area also creates its improved results in the following, uses;

- In Hazardous Waste Remediation (nuclear, chemical, biological); it absorbs, binds-up, holds and stabilizes (D.E. was used by Alfred Nobel in inventing dynamite, stabilizing the nitroglycerine). Due to its pore volume, it can host vast colonies of waste digesting microbes. This is key in maximizing the delivery of desired microbes to the site of targeted waste. DiaSource partnered in a clean-up project at a Super Fund site and has a Provisional Patent drafted for a "D.E. Enhanced Phytoremediation Process". The DOE has previously approved the use of D.E. in vitrification and stabilization of radioactive waste and stabilization of degrading munitions.
- As a "Sun Block", protecting citrus, fruit and nut groves from harmful UV Rays. Also acts in insulating the crops against freeze damage.
- Odor Control in Livestock and Poultry production facilities, suppressing odors of ammonia and manure, reducing mortality of the birds and stock, improving the worksite environment for all personnel. The results are cumulative and sustainable. Effective in absorbing noxious odors from styrene resins in spray-up plastic production, eliminated need for hooded vent systems.
- As a Livestock & Poultry Feed Ingredient, Used as a Growth Promotant, increasing Feed Conversion Rate. Personal and anecdotal results showing parasite control. University Studies (e.g. Clemson) showed Anthelmintic, de-worming results. Mycotoxin mold control in the stored Feed (Soybeans and Corn and Grains). Healthier stock, birds and companion animals.
- Similar product formula enhancements have been brought to; fire rated Thermal Ceramics and fire resistant Caulking materials, to Foundry Casting Molds, Aluminum Paste Coatings, Plastic Sheeting and Adhesives.
- Pitch Control in the manufacture of "free-sheet" copy paper and other paper products; it binds-up "pitch" from wood-stock and "stickies" in recycled paper (4x more effective than talc, the historic pitch control mineral and 2x better than other D.E. products) also reduces VOCs in the paper matrix. Also has an application in remediating Sludge & De-Inking recycled paper.
- In Cement, Shotcrete, Grouts, Plasters, Stucco and Composite Building Materials; more uniform texture free from honeycombs increasing durability, provides uniform strength values, improves plasticity, hardened properties, reduces efflorescence, lowers heat of hydration, maximizes resistance to the effects of freeze/thaw extremes, increases R values, also a sound insulator. Molded Pipe Insulation, replacing asbestos. In Spray-Up Plastics plus VOC control.
- As a "natural grade" Filtration Medium, in trials at a Dairy processing plant, our D.E. replaced an expensive polymer. DiaSource was substituted for the Flocculent in their whey-waste holding tank, ahead of the filter, It was then also added to the filter press. It successfully filtered out the toxic solvents used to clean the Dairy's milk pipelines. They were able to recover and reuse a large percentage of the solvents.
- In successful trials as a Fire Suppressant, it effectively smothered flames and absorbed unburned gasses generated from petrochemicals and other fire generating sources. We know from personal experience, it suppresses grease fires instantly. Fire mitigating crews in Colorado successfully suppressed fires in dry pine wood-chip piles containing high levels of resin pitch.