



**We are the Most Trusted Name in
Separation and Purification Technology**

Dynamic Adsorbents Incorporated

By

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Who is Dynamic Adsorbents, Inc.?

Mission Statement

Dynamic Adsorbents, Inc. (DAI) was formed to develop products for the purification and separation of contaminants in various pharmaceuticals as well as the removal of microbes and pollutants in air and water. The goal is to make our environment a safer place to live and work.

This is being accomplished by developing various media for the removal of heavy metals (i.e. Arsenic III and V) from air and water and developing an antimicrobial, **Dyna-Cidal™** (patented) also for use in air and water. **Dyna-Mask™** is being is now being produced for NIOSH and EPA certification making it the only mask in the world with EPA certification. It already has EU CE certification.

DAI is also looking to provide clean and safe drinking water for all. DAI is looking to develop and patent the new **Dyna-Straw™** for drinking water. DAI is now testing the **Dyna-Aqua™ Oil Sorb** (patent pending) in the Gulf of Mexico for the removal of oil and the chemical dispersants and the Middle East for protection of the desalination water inlets from oil spills.



Dyna-Aqua™ Oil Sorb

The most cost-effective and efficient method to remove oil from sea water.

Dyna-Aqua™ Oil Sorb for cleaning up the Gulf of Mexico or seawater oil spills, including dispersants. Also used to protect desalinization inlets.



What is Dyna-Aqua™ Oil Sorb?

Dyna-Aqua™ Oil combines the two most powerful mechanisms for capturing the greatest amount of oil from surface water. By impregnating cotton with specialized alumina, Dyna-Aqua™ Oil is able to bind up to 3 gallons of oil for every pound of cotton. This is more than any other method in the marketplace. Through the adsorbent properties of alumina, volatile organic compounds can be removed before they make clean-up crews sick.

- **Works through the combination of absorption (cotton) and adsorption (alumina)**
- **Alumina will also allow for absorption of the volatile organic compounds that make people sick**
- **Product dimensions: 6 mm thick, 12 feet wide, and rolls of 100-1000 feet.**
- **Approximately 2/3 of the oil scooped up can be resold. At today's rates, one bale of cotton at 500 lbs would result in 25 barrels of oil at \$2000 (assuming \$80 per barrel)**
- **Based on current leak and surface oil estimates, there would be approximately 25 million gallons available for resale over 50 days, or \$50 million**



Activated Alumina

The Superior Solution for Environmental Cleanup, Pharmaceutical Purification and Clean Energy Applications

Possessing a broad spectrum of useful chemical and biological properties, **DAI** activated alumina is the superior adsorbent or desiccant (**Drysphere™**) for chromatography, separation sciences, purification and many other applications using adsorbents and desiccants. Thanks to **DAI's** "highest quality and consistency in the industry" alumina, and its development of specialized and customized alumina targeted to specific applications, activated alumina has become somewhat of a "miracle substance" providing the best, most cost-effective solutions for many of the most pressing environmental cleanup, pharmaceutical purification, and clean energy problems facing our planet.

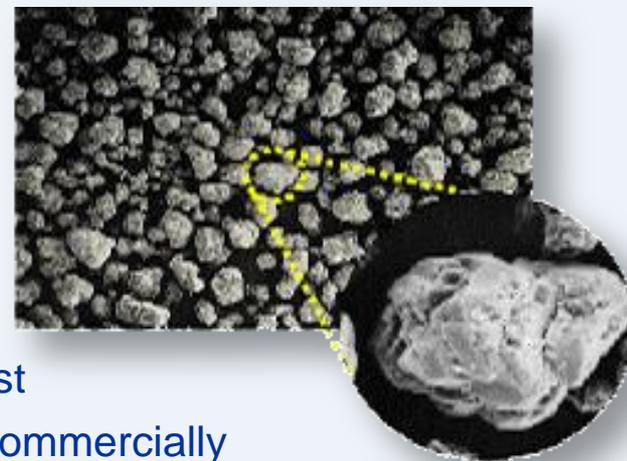


Applications include: removal of toxic metals and hazardous substances from water, PCB removal, gas and liquid dehydration, lithium purification, pharmaceutical purification and decolorization.

What is Activated Alumina?

Activated alumina is an inorganic substance produced by the dehydration of alumina hydroxide at high temperature. The material is highly porous and exhibits tremendous surface area, resulting in superior adsorbent capabilities. It is resistant to thermal shock and abrasion and does not shrink, swell, soften or disintegrate when immersed in water.

Alumina possesses amphoteric properties allowing it to act as either an acid or a base. The ability to alter its pore or particle size provides it with a spectrum of unique biological and physical properties that can address specific desiccant and/or separating needs for the life and environmental sciences. A recent independent lab test demonstrated **DAI** activated alumina to be the superior, commercially available desiccant (**Drysphere™**)



Sampling in Louisiana's Inshore Waters Indicates Presence of Crude Oil

The BP-Deep Horizon oil spill of April 2010 in the Gulf of Mexico was the worst in US history and one of the worst in the world. Contamination of inshore and offshore waters, beaches, salt marshes, bays, etc. has been widely reported, along with ill effects on estuarine and marine fauna. Reports of petroleum hydrocarbon and dispersant concentrations in the water have been variable. Shortly after the leaking well had been capped in July, the federal government announced that most of the 200,000,000 gallons of crude oil released into the Gulf of Mexico was no longer evident.

On August 20, 2010, **Dr. Paul W. Sammarco** of the Louisiana Universities Marine Consortium (LUMCON) conducted reconnaissance on the NW side of Timbalier Island and off Rock Island, Louisiana to determine the presence or absence of petroleum hydrocarbons in inshore Louisiana waters (Terrebonne Bay) using a new, state-of-the-art adsorbent material – **Dyna-Aqua™ Oil Sorb** from **Dynamic Adsorbents, Inc.** The composition of petroleum hydrocarbons was determined along with their concentrations in the cloth and estimates of their concentrations in the seawater.

The water samples derived from the adsorbent cloth yielded 39 hydrocarbon compounds, 23 of which were clearly identifiable. Of those 23, 13 were identified to be petroleum hydrocarbons derived from crude oil. One of the 21 compounds was identified to be 2-butoxy-ethanol - a toxic component of **Corexit®**, the dispersant used by BP and the US Coast Guard in treating the spill.

- Continued on next slide



Cocodrie, LA-- On a dock in Cocodrie, Paul Sammarco unfurls a 15-foot long piece of fabric, a highly absorbent cotton-like material, which may spark a whole new debate over how much oil remained in the Gulf of Mexico this summer.

Sampling in Louisiana's Inshore Waters Indicates Presence of Crude Oil (cont'd)

The cloth collected high concentrations of these compounds ranging from 14-233 mg l⁻¹. When standardized by the estimated volume of seawater sampled, the range of concentrations fell to 0.002-0.033 mg l⁻¹. Considering the circumstances, this was not logical. NOAA's concentrations were reported from in an offshore environment just E-SE of the spill site on May 30, 2010 – 5.5 wks into the spill. One would expect those concentrations to be much higher – since they were sampling down-current of the spill (with respect to major long-shelf currents) while it was still active. **Dr. Sammarco's** samples were taken up-current of the spill site and 5 wks after the well had been capped. Concentrations reported in this study may also be considered to be conservative, based on the mode of sampling (non-forced/flow-through filtering). This, in turn, indicates that NOAA's numbers would appear to be lower than expected for the period of their sampling and in comparison to the data here. In addition, underwater video footage taken by **Mr. Scott A. Porter** on May 7, 2010 shows that the dispersant may have been effective at submerging the oil but was not 100% effective at dissolving it, causing high concentrations of it to be patchily distributed in shallow water. Point-sampling using Niskin bottles to sample seawater when the oil is distributed in this fashion could easily have missed these patches. The sampling technique we used here is broad-scale, cumulative, and is probably better suited to provide representative data of actual concentrations under these circumstances.

This **Dyna-Aqua™ Oil Sorb's** material high sensitivity to petroleum hydrocarbons makes it well suited for a variety of purposes, including surface oil adsorption, fill for adsorbent booms – replacing dated absorbent ones, adsorption of sunken oil concentrated at depth, environmental monitoring, industrial clean-up, and estuarine filters. This also includes **Corexit®**.

