

Texas Tech's Fibertect Absorbent Can Clean Gulf Oil Spill's Crude, Hold Toxic Oil and Mustard Vapors

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(PhysOrg.com) -- As workers battle the Gulf of Mexico oil spill and officials attempt to decontaminate a clam boat that dredged up old munitions containing mustard gas, a Texas Tech University researcher said his product Fibertect can handle both dirty jobs.

Seshadri Ramkumar, an associate professor of nonwoven technologies, said the Texas Tech-created nonwoven cotton carbon absorbent wipe can clean up crude oil and adsorb toxic polycyclic aromatic hydrocarbon vapors reportedly sickening oil spill clean-up crew members.

Also, Fibertect has been tested to successfully remediate mustard vapors such as those found from dumped munitions discovered this week by the crew members aboard the clamming boat off the coast of Long Island.

“Last week, Fibertect was approved for use as a sorbent by the U.S. Environmental Protection Agency,” Ramkumar said. “It definitely has applications for cleaning up the oil spill or this clam boat. Our wipe material is unique from any others in that it easily absorbs liquids, and it has vapor-holding capacity. No product to my knowledge has the capacity to do both.”

A recent report from the National Oceanic and Atmospheric Administration detected low levels of [polycyclic aromatic hydrocarbons](#) associated with the Deepwater Horizon oil spill, Ramkumar said. Also,

such compounds were found at a depth of 400 meters, showing they have not evaporated.

Fibertect already has proven that it can also adsorb toxic fumes associated with chemical remediation, he said. Evaluation by Lawrence Livermore National Laboratory found that it can retain offgassing mustard vapors efficiently and does not shed loose particles.

Originally developed to protect the U.S. military from chemical and biological warfare agents, Fibertect® contains a fibrous activated carbon center that is sandwiched between layers.

The top and bottom layers, made from raw cotton, can absorb oil while the center layer holds [volatile compounds](#) such as the polycyclic aromatic hydrocarbons, or blistering agents such as mustard vapors or other toxic chemicals.

Ramkumar said his latest research shows raw cotton-carbon Fibertect can absorb oil up to 15 times its weight. Unlike synthetic materials like polypropylene that are currently used in many [oil](#) containment booms, Fibertect made from raw cotton and carbon is environmentally friendly. It is available commercially in multiple forms by First Line Technology.

“Fibertect already has proven to be effective in the bulk decontamination of chemical warfare agents and toxic industrial chemicals, but our proposal here is to use it to aid in the clean-up efforts in the Gulf,” said Amit Kapoor, president of First Line Technology “Fibertect allows for a green, environmentally safe, biodegradable technology that is perfect for the expanding effort to protect and decontaminate coastal lands and wildlife. We welcome the opportunity to work with the government, BP or anyone else in a joint effort to defend and preserve our planet.”

Provided by Texas Tech University

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