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In Gulf of Mexico, Chemicals Under Scrutiny

By [ELISABETH ROSENTHAL](#)

As they struggle to plug a leak from a ruptured [oil](#) well in the Gulf of Mexico, BP and federal officials are also engaging in one of the largest and most aggressive experiments with chemical dispersants in the history of the country, and perhaps the world.

With oil continuing to gush from the deep well, they have sprayed 160,000 gallons of chemical dispersant on the water's surface and pumped an additional 6,000 gallons directly onto the leak, a mile beneath the surface.

John Curry, director of external affairs at BP, said the company was encouraged by [the results so far](#). But some environmental groups are deeply nervous.

"I understand it's the only thing they can do," said Paul Orr of the group [Lower Mississippi Riverkeeper](#). "But I think it's vital afterwards to really monitor what's happening with aquatic life, with oil on the sea floor and things like oyster beds."

Even in the best cases, dispersants are applied in what might be termed a lose-lose strategy. Scientists make the calculation that it is better to have the ocean filled with low concentrations of the dispersant chemicals — which are in themselves mild to moderate poisons — than to have dense oil on the surface or washing up onshore, places where it is most likely to harm wildlife.

And while most environmentalists support the application of dispersants as a necessary evil to limit the damage, some have assailed an industry policy that guards their chemical makeup. Keeping the exact mix secret makes it harder to evaluate the risks to marine ecosystems and to

know what side effects to look for as the crisis unfolds.

What is more, the main dispersants applied so far, from a product line called Corexit, had their approval rescinded in Britain a decade ago because laboratory tests found them harmful to sea life that inhabits rocky shores, like limpets, said Mark Kirby, a scientific adviser to the British government on the testing, use and approval of [oil spill](#) treatment options.

But Mr. Kirby added that the finding might have little to no relevance to the current situation, where the product is being applied in the open ocean. While Corexit failed the British government's limpet test, it passed its offshore safety tests, Mr. Kirby said. (The dispersant had to pass both tests for British waters.)

Still, as the molecules from the 160,000 gallons of dispersant bind with the oil from Deepwater Horizon, the oil drilling rig that exploded on April 20, and fan out across the gulf, some groups are fighting for more information about the product's composition. That amount of dispersant is greater than the entire stockpile kept by oil-producing nations like Norway.

"We flew over there and saw BP spraying all over the place," said Frederic Hauge, head of the international environment group [Bellona](#), based in Oslo. "We deserve to know what's in there."

Although the [Nalco Company](#), which makes the Corexit dispersants, posted [copies of the safety documents for two of its dispersants](#) online Wednesday, some of the ingredients are listed as "proprietary."

The 10-page documents go into detail about compounds that must be handled with great care in their original form, that should not touch the skin and can damage lungs. Although the documents state that the potential environmental hazard is "moderate," they say that when used as directed at sea in the recommended amounts the potential environmental exposure is "low."

"It's like any other product," said Charlie Pajor, a senior manager at the Illinois-based company: "We developed them and we're protecting our trade secret."

Mr. Pajor said that the company increased production over the weekend because it generally stockpiles only a small amount, Corexit products are generally used in much smaller amounts to treat far smaller spills, he added.

Mr. Pajor said he could not recall a deployment of the product comparable to the current effort.

Dispersants do not remove the oil from the ocean but instead bind with it and cause oil slicks to break up into tiny droplets that sink and can be “dispersed” by the current. They are particularly effective in treating spills in deep water and far from land, where the current can spread the particles over a large range, diluting their dangerous effects.

“You’re basically taking the oil and transferring it to other compartments where it won’t do so much damage,” said Mr. Kirby, a team leader at [Cefas Lowestoft Laboratory](#) in Britain.

Most dispersants, he said, are a mixture of four to six chemicals that in tandem cause the oil to break up. Roughly 20-odd dispersant products exist, he said, and while they have generally similar types of components, they “have proprietary recipes like Coca-Cola.”

When used out at sea, the products create a toxic plume in the immediate area that might be dangerous for marine life there, scientists agree, but they are diluted rather quickly by currents.

Like the United States and Britain, many countries test and approve the products before they are used, determining how toxic they are when administered in low doses to marine animals like shrimp.

New products are constantly being developed to be more effective. Still, a few countries forbid their use because their long-term effects are somewhat uncertain and many require prior approval of national officials before deployment.

Leslie Kaufman contributed reporting.