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EPA charges DuPont hid Teflon's risks; U.S. orders study on health perils of key chemical

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More than 50 years after DuPont started producing Teflon near this Ohio River town, federal officials are accusing the company of hiding information suggesting that a chemical used to make the popular stick- and stain-resistant coating might cause cancer, birth defects and other ailments.

Environmental regulators are particularly alarmed because scientists are finding perfluorooctanoic acid, or PFOA, in the blood of people worldwide, and it takes years for the chemical to leave the body. The U.S. Environmental Protection Agency reported last week that exposure even to low levels of PFOA could be harmful.

With virtually no government oversight, PFOA has been used since the early 1950s in the manufacture of non-stick cookware, rain-repellent clothing and hundreds of other products. The EPA says at this point there is no reason for consumers to stop using those items. But so many unresolved questions remain about PFOA that the agency is asking an outside panel of experts to assess the risks.

"The fact that a chemical with those non-stick properties nonetheless accumulates in people was not expected," said Charles Auer, director of the EPA's Office of Pollution Prevention and Toxics.

Critics say the lack of knowledge about PFOA and related chemicals--called perfluorinated compounds--exposes a system where environmental regulators largely rely on companies that profit from industrial chemicals to sound alarms about their safety. Questions about potential effects on human health and the environment often aren't raised until years after a chemical is introduced to the marketplace.

The long and mostly secret history of PFOA began to unravel down the road from DuPont's Teflon plant in a West Virginia courtroom, where a Parkersburg family began asking questions in the late 1990s about a mysterious wasting disease killing their cattle.

Jim and Della Tennant suspected the culprit might lurk in a froth-covered creek that meandered past a DuPont landfill near the Teflon plant before spilling into their pasture. Their lawsuit ended with a monetary settlement that avoided assigning blame for the dead cows, but the legal battle uncovered a trove of industry documents about PFOA.

One document detailed how DuPont scientists started warning company executives to avoid human contact with PFOA as early as 1961. Industry tests later determined the chemical accumulates in the body, doesn't break down in the environment and causes ailments in animals, including cancer, liver damage and birth defects.

Recent studies have found that PFOA levels in some children are in the range of those that caused developmental problems in rats.

"We're not very popular with some of the folks over at the plant," said Della Tennant, who lives in a subdivision known as DuPont Manor, a sign of the firm's importance in this corner of Appalachia. "But I don't know how you could sleep at night not telling people about this contamination."

If found guilty of illegally withholding information by an administrative law judge, DuPont could face more than \$300 million in fines--about \$100 million more than the company is estimated to make each year from products manufactured with PFOA.

DuPont already has agreed to pay up to \$345 million to settle another lawsuit filed on behalf of 60,000 West Virginians and Ohioans whose drinking water is contaminated with PFOA. Much of what the public is starting to learn about the chemical comes from industry documents submitted during court proceedings.

Those documents also prompted the EPA's ongoing review of health risks, which could lead to rules that limit or phase out the use of PFOA.

Company's responsibility

Company officials say they share the government's concerns about the presence of PFOA in human blood but contend that they did nothing wrong and that the chemical affects animals differently than people.

"DuPont remains confident that based on over 50 years of use and experience with PFOA there is no evidence to indicate that it harms human health or the environment," company spokesman R. Clifton Webb said.

The company's Teflon plant--a sprawling complex of towers, smokestacks and metal buildings--rises above the flood plain in a sharp bend of the Ohio River. The area has become something of a makeshift laboratory as scientists scramble to learn more about chemicals behind world-famous brand names such as Teflon, Stainmaster and Gore-Tex.

Since 1976, federal law has required companies to disclose what they know about any risks posed by toxic chemicals. The EPA says independent efforts to figure out how people are exposed to PFOA and what it might do to them should have started by the early 1980s, when DuPont discovered an employee had passed the chemical to her fetus.

Among other things, the EPA accuses DuPont of failing to notify the agency when two of five babies born to plant employees in 1981 had eye and face defects similar to those found in newborn rats exposed to PFOA.

DuPont also has known since at least 1984 that water wells in West Virginia and Ohio were contaminated with PFOA, according to company records. But people who rely on the wells for drinking water didn't find out until 2002, when internal DuPont documents started pouring into court.

"Someone made a conscious decision to expose us to this without telling us," said Robert Griffin, general manager of the Little Hocking Water Association, which supplies drinking water to 12,000 Ohio customers from wells across the river from the Teflon plant.

"If you wanted people to be lab rats for such a long period, nobody would ever allow it," Griffin said.

Company lawyers contend DuPont wasn't obligated to share the information because PFOA doesn't meet the legal definition of a toxic chemical that poses a "substantial risk."

DuPont documents, though, show company officials were worried the public would learn that PFOA had contaminated local water supplies. One benefit of settling the lawsuit over the Tennant family's dead cattle, company attorneys advised in an internal e-mail, would be preventing the release of information about PFOA in the water.

"Biggest potential downside: plant contamination issues surface, case becomes class action," DuPont attorney Bernard Reilly concluded in a March 2000 e-mail outlining tradeoffs if the company chose to fight the Tennants in court.

DuPont says it has reduced air and water emissions of PFOA by 90 percent at the Teflon plant. Yet levels of the chemical in water wells on the Ohio side of the river are the highest recorded to date, according to tests last fall.

"Drinking water data in possession of DuPont 'reasonably supports the conclusion' that PFOA 'presents a substantial

risk of injury to health," the EPA wrote in an October filing.

Scientists are just now starting to learn how much of the chemical is in people's blood and how far it has traveled from the handful of sites where PFOA is manufactured or used--information that highlights new challenges for scientists and regulators.

Substances added to food are regulated by the Food and Drug Administration and must undergo rigorous testing before their use. But critics say that with industrial chemicals, the EPA is limited by laws that make it difficult to order testing.

The agency reported in 1998 that it had no toxicity data or "safe level" for 43 percent of the 2,800 chemicals produced in volumes of 1 million pounds a year or more.

"It borders on the ridiculous," said Tim Kropp, a senior scientist with the non-profit Environmental Working Group, which has helped draw the EPA's attention to PFOA and other compounds. "There is no way consumers can be knowledgeable about all of these chemicals. That's why we need the government to ensure they are safe."

EPA case evolves

The EPA's case against DuPont gradually has evolved over four years as industry concerns about PFOA came to light.

Agency officials initially were worried about a related perfluorinated chemical in Scotchguard, the stain-resistant coating pioneered by 3M. Regulators started focusing on PFOA after the EPA pressured 3M in 2000 to stop making the compounds, prompted by research that found the chemicals in human blood and in foods such as apples, bread, green beans and ground beef.

3M had been the chief supplier of PFOA to DuPont, which now makes the chemical at a plant in North Carolina.

DuPont announced last week that a new study of more than 1,000 workers at the Teflon plant found virtually no health effects from exposure to PFOA. Some workers were found to have higher-than-expected cholesterol levels.

Tests on lab animals have found links to illnesses including liver and testicular cancer, reduced weight of newborns and immune-system suppression. The findings concern EPA officials because rats flush the chemical out of their bodies within days, while PFOA stays in human blood for at least four years.

As a result, the EPA says, the potential for human health effects cannot be ruled out.

"Low-level exposure to people over time produces blood concentrations that may be of concern," Auer said. "As time goes on and the opportunity for exposure continues, those blood concentrations could move to even higher levels."

Scientists still aren't sure how PFOA is spreading around the planet. Although DuPont says the manufacturing process leaves only trace amounts of the chemical in non-stick cookware and other goods, some researchers think that as Teflon products age they release chemicals that then break down into PFOA.

The compound also is released into air and water during manufacturing. Studies that have found PFOA in salmon in the Great Lakes, polar bears in the Arctic and dolphins in the Mediterranean Sea suggest the chemical travels easily through the atmosphere.

Another theory the EPA and academic researchers are testing is that other perfluorinated chemicals, known as telomers, break down to PFOA. Made by DuPont and other companies, telomers are used in stain- and grease-repellent coatings for carpets, clothing and fast-food packaging.

Researchers studying PFOA levels in the Great Lakes think that when carpets and clothing treated with telomers are cleaned, some of the chemicals wash into sewage treatment plants that are not equipped to remove them before wastewater is dumped into lakes and rivers. Landfill runoff could be another source.

Last spring, former DuPont chemist Glenn Evers told a lawyer for people living near the DuPont plant that the

chemicals can be absorbed from french fry boxes, microwave popcorn bags and hamburger wrappers, among other items, according to a partial transcript filed by the EPA. The company responded by describing Evers as a disgruntled former employee with little direct knowledge of PFOA.

Reactions in community

In Parkersburg, some are reluctant to question one of the community's leading benefactors, even after the PFOA contamination became public. With more than 2,000 employees, the Teflon plant is the largest manufacturer in a valley lined with plastics factories and refineries, a hub of economic strength in a region plagued by chronic unemployment.

"We're not ignoring it, but you've got to look at all the good things they do," said George Kellenberger, president of the Mid-Ohio Valley Chamber of Commerce.

But others drawn to the area by the promise of a good job and the rolling, pine-covered hills aren't so sure.

By the time Matt and Melinda McDowell built their dream home a few miles north of the Teflon plant, DuPont had known for more than a decade that the local water supply was contaminated with PFOA.

Like thousands of others in the valley, the McDowells recently received a letter informing them that DuPont promises to install treatment equipment for six area water systems under terms of the recent legal settlement.

But they worry about their two sons, ages 8 and 12, who have drunk and breathed PFOA for most of their lives.

"We are subjecting our children and ourselves to a giant science experiment," Matt McDowell said. "We don't know what it's doing to us. But the bottom line is it doesn't belong in drinking water and it definitely doesn't belong in our bodies."

Its global spread puzzles scientists

Researchers are not sure why perfluorooctanoic acid--used to make Teflon, Stainmaster and Gore-Tex--is found around the planet. Here are theories.

BREAKING DOWN: As Teflon products age they release chemicals that break down into PFOA.

EMISSIONS: The compound is released into air and water during manufacturing. Studies have found PFOA in Arctic polar bears and Mediterranean dolphins.

OTHER SOURCE: Other perfluorinated chemicals, known as telomers, break down to PFOA. Telomers are used in stain- and grease-repellent coatings for carpets, clothing and fast-food packaging.

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GRAPHIC: PHOTO: "Someone made a conscious decision to expose us to this without telling us," says Robert Griffin (above), general manager of the Little Hocking Water Association, which supplies water to 12,000 customers from wells across the river from the Teflon plant.

PHOTO: 'We are subjecting our children and ourselves to a giant science experiment.' --Matt McDowell (below), with his wife, Melinda. Tribune photos by Kuni Takahashi.

PHOTOS 2

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