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Dry Cleaners Come Clean

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Fishman, an employee at Northeast Cleaners in Lake City, Wash., said inhaling perchloroethylene causes him headaches and dizzy spells.

For many decades now, perchloroethylene, or perc, has been the dry cleaning industry's standard solvent. But perc's status as an environmental pollutant and carcinogen has many dry cleaners rethinking the way they launder clothing.

There are policies in place to reduce perc pollution. But new dry cleaning systems that don't require perc, such as petroleum and silicone based cleaners, have been developed to cut the use of this chemical. These eco-friendly dry cleaning techniques, along with regulations, have helped make perc both easier to avoid and safer to use.

Since 1855, dry cleaning has become a regular service for many Americans. Brian Richards, owner of Vienna Cleaners in Bellingham, said that dry cleaning was discovered when people began looking for new ways to wash clothes without shrinking them.

Dry cleaning, as its name implies, cleans garments without the use of water. Instead, the clothes are washed in a mixture of soap, a liquid solvent and a bit of moisture. Early dry cleaning solvents included liquids such as gasoline and kerosene.

Today, however, perc is the most commonly used dry cleaning chemical, and it has its fair share of risks. According to the Occupational Safety and Health Administration (OSHA), inhaling perc can cause dizziness and impaired coordination, and long-term exposure can lead to memory loss. Perc is also known to cause cancer in laboratory animals.

Dixie Ervick, a dry cleaning employee from 1967 to 1986, worked with perc daily. At the time of her employment, there were no safety regulations in place for drycleaners, Ervick said.

"We used to take the loads of clothes soaked with perc out of the machines and carry them over to the dryer," Ervick said. "This part of my job made me feel very sick."

One employee who worked at the cleaners with her developed rashes and a nerve condition, Ervick said. She left her job at the dry cleaner shortly after.

Today, Ervick said she has sarcoidosis, a lung condition that she and her doctors blame on many years of working with perc.

"No one told us that percholorethylene was dangerous until the Right-To-Know Act was passed," Ervick said. "Then we were educated about the chemical and the owner had to buy new filters and machines."

The Right-To-Know Act, enacted in 1986, ensures that the public is informed about chemicals they may be living near or working with. The act is meant to improve public safety and protect the environment, according to the Environmental Protection Agency.

Even though there are regulations and safety considerations in place now, the state of California is steering away from perc. According to the Coalition for Clean Air, 10 percent of water wells in California are contaminated with perc. In 1991, California declared perc a toxic chemical, and in 2007, the state enacted a law to ban the use of it in dry cleaning establishments by 2023.

Bri Silbaugh is a specialist who visits Bellingham businesses and helps them identify and reduce pollution. Silbaugh said perc enters the environment when holding containers leak or spill. Perc is stored in plastic drums with tightly secured lids. However, accidents happen, and leaked perc can mix with rain and stormwater. It can even leach through concrete.

Perc waste is created in two main ways, Silbaugh said. Separator water is accumulated during the dry cleaning process. This water is not used for dry cleaning, but comes from moisture in the surrounding air and from moisture in the clothes. It is contaminated with perc and must be disposed of as hazardous waste. The second waste material is known in the dry cleaning industry as sludge. Sludge is a black slime that is made up of sweat, skin, hair and any other grime that is removed during the cleaning cycle. This is contaminated with perc and must be stored and disposed of as hazardous waste as well.

Following in the footsteps of California, many corporations are turning away from perc to eco-friendly processes. Although these techniques are relatively new, they have already been shown to be gentler on both clothing and the environment.

One alternative to perc is DF-2000 Fluid, a petroleum-based cleaning solvent that is sold by Exxon-Mobil. Vienna Cleaners in downtown Bellingham uses DF-2000. For 50 years, Vienna Cleaners used perc as their solvent of choice, Richards said. After his machine broke down in 2000, he decided to invest in machinery designed for use with DF-2000 Fluid.

DF-2000 compatible equipment can run about $70,000, Richards said. The machine sits in a 280-gallon containment tray designed to catch all of the cleaning solution in case of a leak.

Although perc is a faster and better cleaning agent, Richards said he is happy with the DF-2000 solvent. Clothes washed with DF-2000 come out softer and better smelling than clothes washed with perc, Richards said.

Another alternative solution is liquid silicone. Liquid silicone is a common household substance and can be found in toiletries and cosmetics. Dry Cleaning Station, a dry cleaning business in Greenlake, Wash., uses the GreenEarth Cleaning System, a patented method that employs liquid silicone.

Andrea Wallace, owner of Dry Cleaning Station, said she only invested in a dry cleaning business because the process she uses is environmentally friendly.

Skin reactions to the silicon solution have proven mild in comparison to perc in sensitivity tests, Wallace said. The liquid silicone is also gentle on clothing; even garments with pearls and sequins are unharmed in the cleaning process.

And liquid silicone is not harmful to the earth. The non-toxic solution is biodegradable, and if it does make its way into the environment, it will break down into sand, water and carbon dioxide - all natural components, Wallace said.

Despite the options for more eco-friendly dry cleaning techniques, some companies don’t see eliminating perc as a financially feasible option. The GreenEarth Cleaning System machines cost approximately $80,000, Wallace said. Many dry cleaning establishments are small, privately owned businesses. With such businesses already struggling to stay afloat financially, upgrading to new machines could be too costly.

However, Wallace said there are ways to avoid the high cost of new machines. Her business is a clothing drop-off site only, meaning that no washing is done at her store. This relieves Wallace of the cost of purchasing and repairing the machines. She collects customer’s garments and sends them to a main GreenEarth Cleaning System facility in Auburn, and the clothes are returned in three days, Wallace said.

The eco-friendly aspect of dry cleaning is appealing to many customers, Wallace said.

"I would say that 30 percent to 40 percent of customers come in because we are an environmentally green cleaner," she said.

But if switching to a new process is still not practical, educating dry cleaning business on how to prevent perc from entering the environment is yet another strategy to help reduce its impact.

Silbaugh is a Huxley graduate who works for Local Source Control, part of the City of Bellingham Public Works Department, that helps.

While the outright ban of perc may not be in the near future for Washington, businesses like Vienna Cleaners in Bellingham are paving the way with more eco-friendly laundering practices. Perc remains the industry standard solvent, but until that changes, consumers and dry cleaning owners should be aware that environmentally-friendly alternatives are available.