



Finding an Eco-Friendly Dry Cleaner Methods Replace Hazardous Solvent, but Are They Really Safer for the Environment?

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Recently we've spotted a growing number of dry cleaners hawking "organic" and "eco-friendly" services and wondered if they were up to par, or just engaging in green-washing of a different sort.

Roughly 80% of the nation's 30,000 dry cleaners still employ a cleaning method using the liquid solvent perchloroethylene -- or "perc," according to the New York-based National Cleaners Association.

dry-cleaning doesn't use water, it isn't actually a "dry" process, as clothing is immersed in the solvent and a detergent. Many professional cleaners like perc because it is known to remove stains and odors effectively without damaging or shrinking delicate garments.

However, perc has been listed as a hazardous air pollutant by the Clean Air Act and a probable human carcinogen by the International Agency for Research on Cancer. Consumers Union, the not-for-profit publisher of Consumer Reports, has said that long-term exposure could increase the cancer risk for consumers who wear a lot of dry-cleaned clothes.

Industry reps say such research is inconclusive. "We don't have any hard data, but as far as cancer in our industry, there is no higher rate," says Alan Spielvogel, director of technical services for the cleaners association. "And we try to have our [cleaners] handle the solvents in an environmentally friendly manner." Nevertheless, the Environmental Protection Agency is requiring a phase-out of perc at dry cleaners located in residential buildings. And some individual states are clamping down, including California, which last year passed a law to ban use of the solvent in dry cleaning by 2023.

These moves, coupled with consumer appetite for eco-anything, are fueling the growth of professional cleaners who dub themselves as "greener." They're ditching perc for myriad alternatives, such as liquefied carbon dioxide, silicone and gentle, biodegradable detergents.

Green "is becoming more and more of an issue," says Christopher White, director of business development for America's Best Cleaners, which certifies cleaners for quality standards. Nearly two-thirds of his group's 40 U.S. affiliates have stopped using perc, and all of them offer at least one environmentally friendly alternative.

We put a handful of cleaners through their sartorial-sanitizing paces to see how they stacked up, including: Martinizing Dry Cleaning in Dallas; Dry Cleaning Station in Montclair, N.J.; Greener Cleaner in Chicago; and Green Apple Cleaners in New York.

The good news: Aside from producing a few unsightly creases and some bunched-up down feathers in one coat, all the stores we tested generally cleaned as well as, if not better than, our regular outlets. While some methods can be finicky with certain materials, such as triacetate (used in evening gowns), none of our difficult wool, linen or beaded garments shrunk or were damaged. Pricing was competitive with perc cleaners we've used, and two locations offered free pickup and delivery. An olfactory bonus: We couldn't detect any of the chemical odor that often accompanies our dry cleaning home.

Less appealing, however, was our subsequent discovery that there's real debate over just how eco-friendly and safe some of these newer methods are. We tested the four cleaning techniques frequently touted as greener alternatives to perc: "wet-cleaning" -- a more sophisticated version of laundering -- in which garments are cleaned with water, special detergents and high-tech machines and then put on tensioning equipment to reshape them.

The other three methods use roughly the same process as traditional dry-cleaning (i.e. no water) but substitute different solvents for the perc: CO₂ cleaning, hydrocarbon cleaning and a silicone-based cleaner.

At least two of these methods don't get completely sparkling endorsements among some eco-watchers. For instance, the hydrocarbon method uses a petroleum solvent that, while not considered hazardous like perc, contains volatile organic compounds that can contribute to smog, according to the California Air Resources Board.

Likewise, there have been questions raised about the silicone method used by GreenEarth LLC, a Kansas City, Mo.-based company that licenses its technology to 1,300 stores world-wide and is partly owned by [Procter & Gamble](#) Co. and [General Electric](#) Co. The main component of GreenEarth's method is an odorless, colorless liquid called Siloxane D5. In a two-year study of rats by Dow Corning, a significant increase in uterine tumors was found in the rodents after exposing them to D5 at the highest concentration, according to the EPA. GreenEarth spokesman Tim Maxwell says a follow-up study showed Siloxane D5 doesn't pose the same risks to humans. The EPA says it will continue to evaluate information on toxicity and exposure to D5.

For guidance, we turned to Peter Sinsheimer, director of the Pollution Prevention Center at Occidental College in Los Angeles, which focuses on the garment-care industry. "It's absolutely confusing," he says. "We are entering a new world here in terms of regulation of chemicals." As a rule of thumb, he says, "you are pretty darn safe with wet-cleaning" provided you go to a pro that has the proper equipment needed to reshape garments after they're washed.

Mr. Sinsheimer also likes the CO₂ method, which uses compression to convert CO₂ gas into a liquid state to clean clothing along with detergent. Later, as the CO₂ is converted back into a gas, the detergent is pulled off the apparel and the clothing dries. Still, he notes that in some cases these cleaners use machines that employ chemicals not fully tested by any regulatory agency. (Adding to global warming isn't an issue, he says, because the CO₂ is recycled from other industrial operations.) The EPA also recommends wet-cleaning and CO₂ as environmentally preferable cleaning options.

For now, the Web is the best bet for consumers hunting for a non-perc cleaner in their neighborhood. CO2 cleaners are listed at findco2.com, wet-cleaners at professionalwetcleaning.com and GreenEarth cleaners at greenearthcleaning.com. There's also nodryclean.com, which lists various cleaners by method, and Mr. Sinsheimer's site: igreenclean.org.

METHOD/COMPANY/WEB SITE	PRICE	COMMENT
CO2 & Wet-Cleaning Green Apple Cleaners, New York (greenapplecleaners.com)	\$15 down coat; \$6.50 cotton blouse; \$9.30 cashmere sweater; \$8 polyester/viscose/spandex pants	Removed everything from year-old yellow sweat and motor-oil stains to lipstick, perfume and orange Sharpie pen ink. Quibbles: White turtleneck sweater was returned with a dirty line on neck crease, and down in a jacket was bunched up. (Owner offered to clean again.) Extra points for using compostable plastic to protect garments and recycled paper stuffed in sleeves. Offers free hanger caddy that earns a \$2 discount when returned full.
Silicone-based GreenEarth Dry Cleaning Station, Montclair, N.J. (drycleaningstation.com)	\$5.25 men's tuxedo cotton shirt; \$19.50 wool/cashmere coat; \$5.50 wool sweater with metal sequins; \$5.99 men's linen suit jacket; \$12.75 women's silk sheath dress and jacket.	Wool coat looked crisp and silky and fox fur trim unscathed. Eliminated yellow tint on a men's cotton tuxedo shirt and did no harm to a French-made wool sweater with a yoke of sequins. We appreciated cleaner repaired a loose coat button (for \$5) unasked. A few peevies: One flap of Armani linen jacket was creased improperly, and cleaner did not remove pilling on a cashmere sweater.
Hydrocarbon Martinizing Dry Cleaning, Dallas (martinizing.com)	\$6.50 cashmere cardigan; \$13.50 cotton dress with decorative stones; \$7.50 blanket	We got nervous when asked to sign release for pet hair-covered blankets and a dress with colored stones; cleaner said they could react "unpredictably" during cleaning. Still, we found no damage and not a strand of hair from our basset hound, golden retriever and Abyssinian cat -- a feat our regular cleaner had never achieved. Garments with perspiration odors came out smelling fresh, though a cashmere cardigan had annoying wrinkles.
Wet-Cleaning Greener Cleaner, Chicago (greenercleaner.net)	\$6.40 women's cotton dress shirt; \$5.95 wool slacks; \$11 cotton/polyester blanket; \$7.74 linen skirt; \$8.05 women's beaded and sequined rayon top	Cleaner rejected chair cushion stained with car grease and food, saying it would clump during cleaning. It also added a 20% surcharge for linen skirt and rayon. Otherwise, the smoky scent disappeared from a wool sweater, and most of the cat hair was removed from a blanket. No injury done to women's top with beads and sequins, and a women's cotton dress shirt was hand-pressed.

—Lisa Bannon, Ilan Brat and Ann Zimmerman contributed to this article.