

## What is 'perc'?

By **Gilbert Woolley**/ Special To The Tab  
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You may have seen a sign in your dry cleaning store: "Perc free cleaning available" and wondered what is "perc" and why you might not want it to be used. "Perc" is short for Perchloroethylene, (C<sub>2</sub>Cl<sub>4</sub>), a chlorinated solvent that goes by several other names including PCE and tetrachloroethylene and several trade names. In the forties and fifties perc replaced trichloroethylene, which had replaced carbon tetrachloride (both more hazardous than perc), and is now the solvent used by 90% of dry cleaners in the US. Perc is also widely used in industry as a degreaser. Annual usage in the US is many million of gallons of perc. Some of this undoubtedly finds its way into the groundwater and into drinking water. This cannot be good for the earth or the people living on it!

Chlorinated solvents have been shown to cause cancer in some animals and studies of workers in the US who are in daily contact with Perc vapor have found significantly higher levels of esophageal, bladder, tongue, intestinal, lung and cervical cancer. This is consistent with studies in Canada and the UK.

The US OSHA (Occupational Safety and Health Administration) warns that perc is a possible human carcinogen (04/15/05) and strictly limits exposure in the workplace. The International Agency For Research on Cancer classifies perc as a "possible human carcinogen". (1995). Perc accumulates in body fat. More immediate effects include nausea, headaches, dizzy ness and drowsiness. As a customer you wont be exposed to the same levels but it's a good idea to avoid exposure to harmful chlorinated solvents, and people who are sensitive to chemicals should beware of contact with garments cleaned by perc.

Like tobacco and alcohol, Perc is not a deadly poison, but it is harmful, and dry cleaners should be required to provide a written warning to customers, just as makers of tobacco products and alcoholic drinks are required to do. This warning should give the "possible carcinogen" status and warn chemically sensitive users about perc.

For people who are not exposed to perc in the workplace the most likely pathway into the body is through the lungs. You must have noticed the rather unpleasant odor of newly dry cleaned garments Tests show that, even after a hundred days, 40% of the perc in the garment after cleaning is still present. When you pick up a garment from the dry cleaners you should take it out of the plastic bag and hang it outdoors or in a well-ventilated area for some days to reduce the amount of perc vapor you bring into your home. This is especially important for large, heavy items, such as "comforters" and sleeping bags, and when a number of garments are packed in one bag. People who live over, or near to a dry cleaning operation may be exposed to harmful levels of perc vapor.

NIOSH (National Institute of Safety and Health) studied methods to limit perc emissions. The study confirmed that technology is available in Europe to do so.

Germany has imposed regulation to mandate use of such technology. This requires a considerable capital investment, and without similar regulation in the US there is no incentive to make this investment. Government regulations prohibit the disposal of perc or water containing perc into a sewer, but these regulations are largely self-enforced. Sewage treatment does not remove perc and treated wastewater will be discharged into rivers or the ocean. Perc has been detected in drinking water at many locations in the US.

### **Alternatives to perc**

Google "perc alternatives" to find alternatives to perc. One "perc free" option is "wet clean", the use of detergents and water instead of perc. Google "wet clean" for more information. There are fabrics that are difficult to wet clean without shrinking and some stains that are easier to remove using perc, but many garments carrying the "dry clean only" label can be safely wet cleaned. New wet clean technology has tightly-controlled temperatures for washing and drying, which makes it possible to wet clean some articles that would be difficult to wash using conventional methods. The most complete page is by the US EPA, (labeled) PDA which gives information on wet cleaning and also lists providers of non-perc cleaning by state.

Wet cleaning eliminates many of the disposal problems of perc because the wastewater can be safely discharged into the sewer. Another advantage is that "non perc" cleaners do not have to register with the EPA.

Another "perc free" method is to launder articles in liquid CO<sub>2</sub> (carbon dioxide), which is non-toxic but this method is not in widespread use. The dry cleaner I use in Newton advertises "perc-free cleaning available" but his system uses oil based, not water based, cleaning fluid.

### **How to limit exposure to perc**

- Buy as few garments as you can, which carry the "Dry Clean Only" label
- Use a "wet cleaner" The US EPA web page lists four wet cleaners in Massachusetts, including one in Newton: Corner Cleaners, 1301 Washington St, West Newton.
- Google "wet cleaners" to get more information
- Ask your dry cleaner to offer "perc-free" cleaning.
- Have garments dry-cleaned less often
- Try careful hand washing. For guidelines go to Google: "stain removal".

*Gilbert Woolley is a retired engineer. He has been a very active member of the Sierra Club since 1971, and he served on the Sierra Club National Toxics Committee for six years.*

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