Dry Cleaning Solvents

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Dry cleaning solvents are used to safely remove stains and soiled areas from garments such as wool that would otherwise be damaged by the use of detergents and water. After dry cleaning, residual solvent remains on the fabric that can later be off-gassed in the consumer's home, thereby affecting indoor air quality. To reduce the risk of exposure to residual dry cleaning solvents, it is best to remove the bag from the garment and allow the garment to vent outside.

Tetrachloroethene (also known as perchloroethylene, PCE) (CAS 127-18-4) has been the most popular dry cleaning solvent in recent years. It is also used as a degreasing agent for cleaning metal surfaces. PCE has been classified as "likely to be carcinogenic to humans" (http://www.epa.gov/airtoxics/hlthef/tet-ethy.html). Trichloroethylene (CAS 79-01-6) is often used as a spot-cleaning agent prior to dry cleaning. TCE has been classified as a human carcinogen (http://ehp.niehs.nih.gov/1205879/). In 2008, the State of California Air Resources Board banned the sale of new equipment and machines using PCE and offered financial incentives for the use of less toxic substances. Alternative solvents being considered include decamethylcyclopentasiloxane (CAS 541-02-6), propylene glycol t-butyl ether formulations, n-propyl bromide (CAS 106-94-5), and dipropylene glycol n-butyl ether (DPGBE) (CAS 29911-28-2) combined with liquid carbon dioxide (http://www.arb.ca.gov/toxics/dryclean/alternativesolvts_e.pdf).

Dry cleaning solvent vapors can also enter a home by a different route. Prior to environmental disposal regulations, historical disposal practices of waste solvents by the dry cleaning industry resulted in ground water and soil contamination. Vapors from these solvents can migrate through the soil and sub-slab of a home and intrude into the home (i.e., vapor intrusion), thereby providing an additional entryway for these solvents to impact indoor air quality (for example, http://www.epa.gov/region2/superfund/npl/vaporintrusion/vaporintrustionimages.pdf).