

New York State Department of Health

Tenant Notification Fact Sheet for Carbon Tetrachloride

This fact sheet is provided to fulfill New York State Department of Health (NYS DOH) requirements for preparation of generic fact sheets under Article 27 (Title 24, Section 27-2405) of the Environmental Conservation Law.

Carbon Tetrachloride

Carbon tetrachloride is a man-made volatile organic chemical that was used as a household spot remover, an industrial degreasing agent, in dry cleaning, in fire extinguishers, and as a grain fumigant to kill insects. Most of these uses have been discontinued. Carbon tetrachloride was also used to make refrigerants and propellants for aerosol cans, but this use has declined in recent years because of the effects of many refrigerants and aerosol propellants on the earth's ozone layer.

Sources of Carbon Tetrachloride in Indoor Air

Household products containing carbon tetrachloride could be a possible source for carbon tetrachloride in indoor air. Another source could be evaporation from contaminated well water that is used for household purposes. Carbon tetrachloride may also enter homes through soil vapor intrusion, which occurs when the chemical evaporates from groundwater, enters soil vapor (air spaces between soil particles), and migrates through building foundations into the building's indoor air. Carbon tetrachloride has also been found at low concentrations in outdoor air.

Levels Typically Found in Air

The NYS DOH reviewed and compiled information from studies in New York State as well as from homes and office buildings across the United States on typical levels of carbon tetrachloride in indoor and outdoor air. Levels of carbon tetrachloride in the indoor air of homes and office settings and in outdoor air are expected to be less than 1 microgram per cubic meter (mcg/m^3).

Health Risks Associated with Exposure

There is limited information on the health effects of carbon tetrachloride in humans following long-term exposure. Some humans exposed to large amounts of this chemical over short periods of time have had nervous system, liver and kidney damage. Exposure to high concentrations of carbon tetrachloride damages the liver, kidney, nervous system and male reproductive system in laboratory animals. Carbon tetrachloride causes cancer in laboratory animals exposed at high levels over their lifetimes. Whether or not carbon tetrachloride causes cancer in humans is unknown. Taken together, the human and animal studies suggest that long term human exposure to carbon tetrachloride (particularly at high levels) may increase the risk for cancer and for liver, kidney and nervous system toxicity.

NYS DOH Air Guideline

The NYS DOH has not established a chemical-specific guideline for carbon tetrachloride in air. However, NYS DOH guidance for carbon tetrachloride and other air contaminants is that reasonable and practical actions should be taken to reduce exposure when indoor air levels are above those typically found in indoor air. The urgency to take actions increases as indoor air levels increase. The carbon tetrachloride exposure levels that cause health effects in animals or humans are many times higher than levels typically found in indoor air.

Ways to Limit Exposure to Carbon Tetrachloride in Indoor Air

In all cases, the specific actions to limit exposure to carbon tetrachloride in indoor air depend on a case-by-case evaluation of the situation. Removing household sources of carbon tetrachloride and maintaining adequate ventilation will usually help reduce indoor air levels of the chemical. A sub-slab depressurization system can reduce the amount of carbon tetrachloride entering indoor air by soil vapor intrusion. Use of an activated carbon filter on the water supply can reduce the amount of the chemical in contaminated well water that could evaporate into indoor air.

Reportable Detection Level

The reportable detection level for a chemical can vary depending on the analytical method used, the laboratory performing the analysis, and several other factors. Most laboratories that use the analytical methods recommended by the NYS DOH for measuring carbon tetrachloride in air (and approved by the National Environmental Laboratory Accreditation Conference or New York State's Environmental Laboratory Approval Program) can routinely detect the chemical at concentrations below 1 mcg/m³.

Additional Information

Additional information on carbon tetrachloride, ways to reduce exposure, indoor air contamination resulting from soil vapor intrusion, indoor and outdoor air levels and the Environmental Conservation Law can be found on the NYS DOH website at www.health.state.ny.us/environmental/indoors/air/contaminants/.

If you have further questions about carbon tetrachloride and the information in this fact sheet, please call the NYS DOH at 1-518-402-7800 or 1-800-458-1158 (extension 2-7800), e-mail to ceheduc@health.state.ny.us, or write to the following address:

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