



Indoor Air Quality



Volatile Organic Compounds (VOC's)

Volatile organic chemicals (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors.

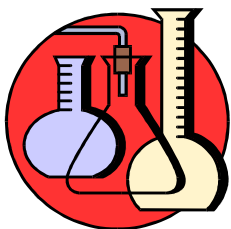
Trichloroethylene (TCE) is a commercial product found in a wide variety of industrial uses. Over 90 percent of the TCE produced is used in the metal degreasing and dry cleaning industries. In addition, it is used in printing inks, paints, lacquers, varnishes, and adhesives. In 1975 the National Cancer Institute reported that an unusually high incidence of hepatocellular carcinomas was observed in mice given TCE by gastric intubation and now considers this chemical a potent liver carcinogen.

Benzene is a very commonly used solvent and is also present in many common items including gasoline, inks, oils, paints, plastics, and rubber. In addition it is used in the manufacture of detergents, explosives, pharmaceuticals, and dyes.

Benzene has long been known to irritate the skin and eyes. In addition, it has been shown to be mutagenic to bacterial cell culture and has shown embryotoxic activity and carcinogenicity in some tests. Evidence also exists that benzene may be a contributing factor in chromosomal aberrations and leukemia in humans. Repeated skin contact with benzene will cause drying, inflammation, blistering and dermatitis. Acute inhalation of high levels of benzene has been reported to cause dizziness, weakness, euphoria, headache, nausea, blurred vision, respiratory diseases, tremors, irregular heartbeat, liver and kidney damage, paralysis and unconsciousness. In animal tests inhalation of benzene led to cataract formation and diseases of the blood and lymphatic systems. Chronic exposure to even relatively low levels causes headaches, loss of appetite, drowsiness, nervousness, psychological disturbances and diseases of the blood system, including anemia and bone marrow diseases.

Formaldehyde is a ubiquitous chemical found in virtually all indoor environments. The major sources which have been reported and publicized include urea-formaldehyde foam insulation (UFFI) and particle board or pressed wood products used in manufacturing of the office furniture bought today. It is used in consumer paper products which have been treated with UF resins, including grocery bags, waxed papers, facial tissues and paper towels. Many common household cleaning agents contain formaldehyde. UF resins are used as stiffeners, wrinkle resisters, water repellents, fire retardants and adhesive binders in floor coverings, carpet backings and permanent-press clothes. Other sources of formaldehyde include heating and cooking fuels like natural gas, kerosene, and cigarette smoke.

Formaldehyde irritates the mucous membranes of the eyes, nose and throat. It is also a highly reactive chemical which combines with protein and can cause allergic contact dermatitis. The most widely reported symptoms from exposure to high levels of this chemical include irritation of the eyes and headaches. Until recently, the most serious of the diseases attributed to formaldehyde exposure was asthma. However, the Environmental Protection Agency (EPA) has recently conducted research which has caused formaldehyde to be strongly suspected of causing a rare type of throat cancer in long-term occupants of mobile homes.



Other pollutants such as Radon and Lead pose significant risks to your health. Simple testing materials are available at most home centers and hardware stores to indicate the presence of radon and lead. For more information on Indoor Air Quality, and how to find a qualified testing professional visit www.epa.gov