

# Guidance for Trichloroethylene (TCE) in Air

TCE is a man-made chemical that can be found in our environment as a liquid or gas. TCE evaporates from water to air easily and can remain in groundwater and soil for long periods of time. TCE is mainly used as a solvent in manufacturing to degrease metal parts. It can also be used in the production of other industrial chemicals. Wood finishes, glues and adhesives, paint or paint removers, spot cleaners, metal cleaners and other consumer products in your home may contain TCE. You cannot see or smell TCE at low levels and should never rely on sight or smell to detect TCE in a home or building. Breathing TCE, especially at high levels or over long periods of time, can cause negative health effects. MDH developed a health-based value for TCE in air to protect people who are likely to be most sensitive, at highest risk for negative health effects, and the general public.

## How can you be exposed to TCE?

- working in industries that produce or use TCE
- living or working near industries that release or have released TCE to the nearby water or air
- using products with TCE in them at home or at work
- breathing vapors from contaminated soil or groundwater that moves into indoor air
- drinking contaminated water (see [MDH's water guidance table](#) for information on TCE in water)

## Potential health concerns from breathing TCE

**Most exposures to TCE in air are in low amounts and not likely to result in negative health effects.** You are more likely to experience health effects from breathing TCE if levels of TCE in the air are high and/or you have been exposed to TCE in the air for a long period of time. Your age, body size, and current health status also influence any effect TCE could have on your health.

Animal studies show TCE exposure in early pregnancy may increase the risk of certain heart defects. In most cases, this risk is thought to be extremely low. TCE may also affect the immune system, including changes to the developing immune system in early life. TCE may also harm the central nervous system, kidney, liver, and male reproductive system.

Studies in workers and animals breathing very high levels of TCE suggest that long-term exposures may increase the risk of certain types of cancer (kidney, liver, and non-Hodgkin's lymphoma).

## MDH TCE Air Values

The Minnesota Department of Health evaluated available information to develop a TCE health-based value (HBV) for protecting public health. The non-cancer HBV is protective for pregnant women, women who might not yet know they're pregnant, and a developing baby. The non-cancer HBV is also protective for children, people with compromised immune systems, and the general public. The cancer HBV is protective for a lifetime exposure.

HBVs are much lower than the regulatory limits set for workplaces where the chemical is used. Breathing an amount of TCE that is above the HBV does not mean health effects will occur; however, the risk for health effects increases as the level of exposure increases. When HBVs are exceeded, MDH recommends taking steps to reduce or avoid exposures.

TCE HBV	Description
2 µg/m <sup>3</sup>	Non-cancer HBV - a level that is protective of a developing baby, and everyone else for short-term and long-term exposures
2 µg/m <sup>3</sup>	Cancer HBV - a safe level for people who may have exposures over many years

µg/m<sup>3</sup> is a microgram per cubic meter measure of air volume