

Purpose

The Pennsylvania Department of Health (PADOH) and the Agency for Toxic Substances and Disease Registry (ATSDR) developed this factsheet to share information about the public health review of levels of a chemical known as TCE (trichloroethylene) detected in the indoor air at the Chem Fab site. Based on the highest levels of TCE found in the air at office spaces 300 and 330, PADOH and ATSDR recommended that exposures in indoor air be reduced to protect the health of pregnant women and children at this site. Starting in 2012, the U.S. Environmental Protection Agency (EPA) and the building owner took interim actions to reduce TCE levels in indoor air at this site. A permanent remedy to control exposures to TCE at all office locations was installed in the fall 2015.

Background

The Chem Fab site is located N. Broad Street in Doylestown, Pennsylvania. From 1965 to 1994, an electroplating and metal processing facility operated at this location. Three multi-unit commercial buildings are currently located on-site. As a result of the past electroplating and metal processing operations, groundwater underneath the property is contaminated with volatile organic compounds (VOCs) and other chemicals commonly found in solvents and degreasers, including TCE. This contamination is being investigated and cleaned up by EPA. Indoor air sampling has identified site-related VOCs in the indoor air of one of the commercial buildings. PADOH and ATSDR have evaluated the results of various indoor air sampling events to determine if the public is being harmed by exposures to TCE. This fact sheet summarizes the findings of the most recent air sampling events conducted at Chem Fab. The complete report can be found on-line at:

http://www.atsdr.cdc.gov/HAC/pha/ChemFabSite/Chem%20Fab%20Site_LHC_Final_07-28-2015_508.pdf

Who is at risk?

PADOH and ATSDR evaluated indoor air sampling data collected from seven office space locations in April 2014, January 2015, and April 2015. Maximum concentrations of TCE were used to evaluate people's potential for health effects. Based on this data, PADOH and ATSDR concluded that:

- Indoor air levels of TCE at office locations 300 and 330 are a public health hazard. Pregnant women exposed to the detected levels of TCE may have an increased risk of a birth defect of the heart in the developing baby.
 - Visitors and part-time workers are NOT likely to experience any harmful health effects from TCE exposure at these two office space locations.
- No harmful health effects are expected at office locations 310, 314, 320, 324 and 328. Workers and visitors are not likely to experience any adverse health effects to TCE.

What are PADOH and ATSDR doing to protect the public?

PADOH and ATSDR made the following recommendations to protect the public and reduce any potential health risks:

- EPA should take immediate steps to reduce the level of TCE in the indoor air at office spaces 300 and 330. To address this recommendation, EPA purchased and installed portable air filtration units to decrease the indoor levels of TCE at some office space locations.
 - The portable air filtration units should be operated 24 hours, every day.
 - The air filtration unit filters should be changed regularly until a permanent remedy to reduce or eliminate TCE exposures in indoor air is installed. For more information about the work EPA is doing to reduce TCE exposures and for filter replacement, please contact Eduardo Rovira at: Rovira.eduardo@epa.gov or 215-814-3436.
 - EPA should conduct periodic indoor air sampling until TCE levels are consistently below levels of health concern.
- EPA should take steps to ensure a permanent solution is in place that prevents exposure to harmful levels of TCE in all offices at the Chem Fab site. To address this recommendation, EPA received a preliminary design for a permanent vapor mitigation system in August 2015. Construction of the system was completed in the fall 2015.

More information about the indoor air sampling event and PADOH/ATSDR's most recent evaluation on this information can be found on line at: http://www.atsdr.cdc.gov/HAC/pha/ChemFabSite/Chem%20Fab%20Site_LHC_Final_07-28-2015_508.pdf or by contacting an agency representatives (contact information at bottom of next page).

What is TCE?

TCE is a nonflammable colorless liquid. It was used as a solvent to remove grease from metal parts. It is still found in adhesives, paint removers, and spot removers. At the Chem fab site, TCE was used in metal etching and electroplating activities.

How would I be exposed to TCE at the Chem Fab site?

TCE in the soil and groundwater can evaporate and enter the indoor air of the building at the Chem Fab site. People who occupy, work, or visit these buildings may have been exposed to TCE in some office spaces.

How could my health be affected by breathing TCE at this site?

The effect of exposure to any chemicals, including TCE, depends on several things including: the amount of chemical you were exposed to, how long you were exposed, and factors such as gender, age, body size, and other existing health issues. The TCE levels found at this site do not pose a health risk to most people. They do pose a potential health risk to the developing babies of pregnant women at two office spaces (300 and 330) where the highest levels of TCE were detected.

What are the health effects of exposure to TCE?

Animal studies show that TCE can affect the immune system and kidneys. Birth defects of the heart have been seen in the offspring of rats who drank water with TCE.

Based on animal studies, the EPA predicts that pregnant women exposed to TCE may be at an increased risk of having a baby with a birth defect of the heart. This risk is heightened when pregnant women are exposed to TCE during the first trimester of their pregnancy when the baby's heart and organs develop. The health agencies use very conservative assumptions with safety factors in order to protect people's health.

Does TCE cause cancer?

Several government organizations consider TCE to be carcinogenic. There is strong evidence that trichloroethylene can cause kidney cancer in people and some evidence that it causes liver cancer and malignant lymphoma (a blood cancer). Lifetime exposure to trichloroethylene resulted in increased liver cancer in mice and increased kidney cancer in rats at relatively high exposure levels. However, based on the levels seen at this site, PADOH and ATSDR concluded that there is no apparent increased cancer risk to visitors and employees working in the offices.

Can PADOH and ATSDR evaluate my health problem or medical conditions?

ATSDR and PADOH staff cannot diagnose or provide individual health care advice, but we may be able to assist you in other ways. Please talk to your doctor about your individual health condition. ATSDR and PADOH are available to talk to you and, with your permission, your doctor about the potential health risk from the level of TCE found in the office air. ATSDR staff can help you find an expert for you or your doctor to talk to about these chemicals and their possible health effects.

If I have questions for PADOH or ATSDR, who can I speak with?

For questions related to PADOH's work at the Chem Fab site, you may contact PADOH:

Sassi Arunachal, PADOH Health Assessor, Phone: 717-547-3310, or e-mail at sarunachal@pa.gov.

For questions related to ATSDR's work at the Chem Fab site, you may contact ATSDR:

Ana Pomales, Environmental Health Scientist, Phone: 215-814-5716, or e-mail at fwag@cdc.gov.