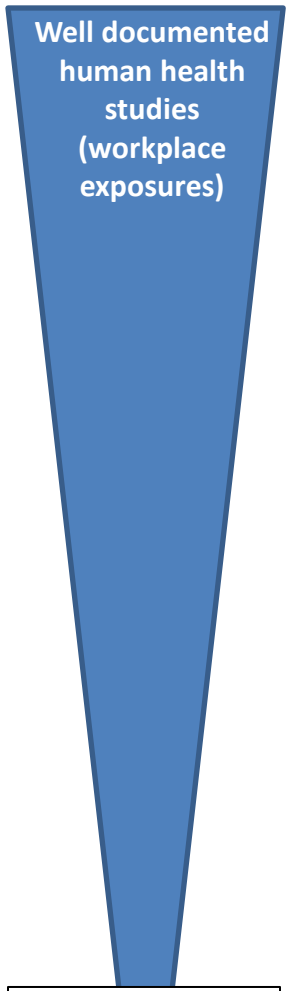
PCE Inhalation & Health Effects



10,000,000 ppb

1,000,000 ppb

Acute Human Effects:
100,000 - 200,000 ppb (irritation eyes and respiratory tract)

100,000 ppb

Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) = 100,000 ppb (based upon an 8 hr. work day -- industrial setting -- healthy adult)

Chronic Human Effects:
50,000 -300,00 ppb (dizziness, headache, lack of coordination)

10, 000 ppb

Human Odor Threshold (where humans can smell PCE) = 1000 ppb

1000 ppb

100 ppb

U.S. EPA indoor air sampling at GM Moraine highest PCE value recorded in a home = 22.0 ppb

10 ppb

U.S. EPA's Chronic inhalation Reference Concentration (RfC) = 6.0 ppb

U.S. EPA indoor air sampling at GM Moraine average PCE value recorded in homes = 2.1 ppb

1 ppb

Former GM Moraine Site

- 89 indoor air samples were collected from 42 properties
- Of the 89 samples, 82 had detections of PCE

Glossary of Terms:

- **Units measured in parts per billion (ppb).**
- **Acute exposure = short-term**
- **Chronic exposure = long-term**
- **Cancer Risk = Theoretical number of increases in cancer risk if a person is exposed 365 days a year for 70 years**
- **RfC = daily exposure that is unlikely to cause an adverse health effect**

EPA Theoretical Additional Lifetime Cancer Risk Calculations for Chronic PCE Inhalation Exposures
60.0 ppb = 1 in 10,000 risk 10^{-4}
6.0 ppb = 1 in 100,000 risk 10^{-5}
0.6 ppb = 1 in 1,000,000 risk 10^{-6}

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