

TOLUENE (contaminant in ProcellaCor herbicide)

(Compiled by Sylvia Knight, VT PAPAN. 3/16/23)

Toluene is a Persistent Organic Pollutant (POP), one of a list of POPs developed by the Stockholm Convention. POPs are transported by wind and water from one country to another, and can move around the world, reaching the farthest reaches of the globe. Some can bio-concentrate through different species in the food chain.

<https://www.epa.gov/international-cooperation/persistent-organic-pollutants-global-issue-global-response#pops>

Toluene has moderate acute (short-term) toxicity on aquatic life, and has caused membrane damage to the leaves in plants. It has moderate chronic (long-term) toxicity to aquatic life. Chronic and acute effects on birds or land animals have not been determined. Toluene is expected to minimally bioaccumulate. https://www.dcceew.gov.au/environment/protection/npi/substances/fact-sheets/toluene-methylbenzene#toc_2

Toluene shows high mobility in soil. Major exposure routes are through air and contaminated water. Toluene can cause respiratory irritation, immune depression, decreased resistance to infections such as pneumonia, and adversely affect the central nervous system. <https://www.atsdr.cdc.gov/ToxProfiles/tp56-c2.pdf>

Toluene can cause tiredness, confusion, weakness, memory loss, nausea, loss of appetite, hearing loss, and color vision loss on a temporary basis.

<https://www.floridahealth.gov/environmental-health/drinking-water/documents/toluene-fs.pdf>

Research indicates that environmentally relevant low levels of toluene could disrupt normal prenatal brain development, an indication of endocrine disruption. <https://pubmed.ncbi.nlm.nih.gov/12507177/>

The maximum contaminant level allowed by EPA for toluene in water is **1 part per million (ppm)**. It affects the nervous system, kidney and liver. It comes from discharge from petroleum factories. <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations#two>

Vermont has set **no Maximum Allowable Concentration (MAC)** for toluene in drinking water, so the federal standard must obtain. Vermont has set a **57 ppb** limit for consumption of toluene in both water and organisms, and a **520 ppb** limit for consumption of organisms only. There is **no state water standard** for the protection of aquatic organisms.

<https://dec.vermont.gov/sites/dec/files/documents/2022-Vermont-Water-Quality-Standards.pdf>

The fact that toluene is derived from the manufacture of gasoline and other fuel from crude oil connects this contaminant and its host pesticide florpyrauxifen-benzyl to the petroleum industry, a major participant in the global warming crisis.