



Pentachlorophenol

Pentachlorophenol (Penta) is the most commonly used preservative for wooden utility poles. Penta is an Environmental Protection Agency (EPA)-registered biocide under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). Its use for pressure and thermal treatment of wood products, including utility poles, is approved by the EPA.

Penta poles

- Penta treated poles remain soft, and they are less prone to dry out; making them safer for utility workers to climb.
- Penta poles retain their natural appearance, typically aging to a brown, silver gray or natural wood tone, an important consideration from an aesthetic standpoint.
- Penta poles are water resistant and less prone to cracking which helps to extend their service life. Typically, treated poles can last 40 years – in certain situations, treated poles can last over 60 years, which reduces operation and maintenance costs, and costs to electric ratepayers.
- Environmental and landowner impacts are greatly reduced as fewer trips are required into the right-of-way to maintain and replace poles. Even with treatment, poles are tested and inspected on average every 10 years.
- Penta is toxic to wood-destroying insects and micro-organisms, but degrades quickly in soil and water.



Penta in Water

- Degradation in water occurs rapidly through photo degradation sometimes in as little as 20 minutes.
- The Electric Power Research Institute (EPRI) concluded that the attenuation factors of penta suggest that penta leaching from wood poles “will not be detectable in downgrading groundwater.”

Penta in Soil

- Over time, trace amounts of penta can migrate from the pole into surrounding soils. EPRI conducted an extensive study of the soil surrounding penta treated wood poles; concluding that the soil concentrations and migration from poles varied due to localized factors such as soil type, pH, and weather. Penta concentrations in the soil decreased rapidly with an increase in the distance from the poles.
- Numerous micro-organisms that exist in soil degrade penta under both aerobic and anaerobic conditions (half-life of 1-2 months).



Disposal of Utility Poles

- Penta poles are not considered a hazardous waste and can be disposed of at municipal landfills.
- The best option is to recycle or reuse poles; many landowners and farmers use the poles for farm applications (e.g., pole barns, fencing).

Additional Information

- The United States Government: www.regulations.gov, docket number EPA-HQ-OPP-2004-0402
- The U.S. Environmental Protection Agency: www.epa.gov/pesticides/factsheets/chemicals/pentachlorophenol.htm
- The Agency for Toxic Substances and Disease Registry: <http://www.atsdr.cdc.gov/tfacts51.html#bookmark01>
- The American Wood Preservers Association: www.awpa.com