

Coal tar creosote

See also: [Carbolineum](#)

When most people use the term creosote, they are referring to coal tar creosote. Coal tar creosote is the most widely used wood [preservative](#) in the world. It is a thick, oily liquid typically amber to black in colour. The American Wood Preservers' association states that creosote "shall be a distillate derived entirely from tars produced from the carbonization of bituminous coal." Coal tar used for certain applications may be a mixture of coal tar distillate and coal tar. See, [AWPA Standards](#)

The prevailing use of creosote in the United States is to preserve wooden utilities/telephone poles, railroad cross ties, switch ties and bridge timbers from decay. It is registered with USEPA for this purpose. [Coal tar](#) products are also used in medicines to treat diseases such as [psoriasis](#), and as animal and bird repellents, [insecticides](#), animal dips, and [fungicides](#). Some over the counter anti-dandruff shampoos contain coal tar solutions. Due to its carcinogenic character, the European Union has banned the sale of creosote treated wood^[1] and requires that the sale of creosote be limited to professional users.^[2]

[\[edit\]](#) Health effects of coal tar creosote

According to the Agency for Toxic Substances and Disease Registry (ATSDR), eating food or drinking water contaminated with high levels of coal tar creosote may cause a burning in the mouth and throat, and stomach pains.

ATSDR also states that brief direct contact with large amounts of coal tar creosote may result in a rash or severe irritation of the skin, chemical burns of the surfaces of the [eyes](#), [convulsions](#) and mental confusion, kidney or liver problems, [unconsciousness](#), and even [death](#). Longer direct skin contact with low levels of creosote mixtures or their vapors can result in increased light sensitivity, damage to the [cornea](#), and skin damage. Longer exposure to creosote vapors can cause [irritation](#) of the [respiratory tract](#).

The [International Agency for Research on Cancer](#) (IARC) has determined that coal tar creosote is probably carcinogenic to humans, based on adequate animal evidence and limited human evidence. It is instructive to note that the animal testing relied upon by IARC involved the continuous application of creosote to the shaved skin of [rodents](#). After weeks of creosote application, the [animals](#) developed cancerous skin lesions and in one test, lesions of the lung. The [United States Environmental Protection Agency](#) has stated that coal tar creosote is a probable human carcinogen based on both human and animal studies.^[3] As such, the Federal [Occupational Safety and Health Administration](#) (OSHA) has set a permissible exposure limit of 0.2 milligrams of coal tar creosote per cubic meter of air (0.2mg/m³) in the workplace during an 8-hour day, and the Environmental Protection Agency (EPA) requires that spills or accidental releases into the environment of one pound (0.454kg) or more of creosote be reported to them.^[4]

There is no unique exposure pathway of children to creosote. Children exposed to creosote will probably experience the same health effects seen in adults exposed to creosote. It is unknown whether children differ from adults in their susceptibility to health effects from creosote.

A 2005 mortality study of creosote workers found no evidence supporting an increased risk of cancer death as a result of exposure to creosote. Based on the findings of the largest mortality study to date of workers employed in creosote wood treating plants, there is no evidence that employment at creosote wood-treating plants or exposure to creosote-based preservatives was associated with any significant mortality increase from either site-specific cancers or non-malignant diseases. The study consisted of 2,179 employees at eleven plants in the United States where wood was treated with creosote preservatives. Some workers began work in the 1940s to 1950s. The observation period of the study covered 1979- 2001. The average length of employment was 12.5 years. One third of the study subjects was employed for over 15 years. [\[5\]](#)