



Driveway Sealants in Your Lake? FAQs about PAHs

What if you were walking through the woods one day and came upon a five-gallon bucket oozing black coal tar on to the ground? Your first thought might be, “what inconsiderate person would do this with no regard for the environment?”

Then, what if you noticed your neighbors brushing the same coal tar material on to their driveway to seal the numerous cracks that inevitably show up on asphalt due to weathering? If you are like most people, you would probably think they were doing a smart thing by saving their driveway from the ravages of the climate.



But, did you know that the seemingly innocuous act of sealing a driveway with a liquid coal tar product could be sealing the fate of a nearby lake or pond?!

What is coal tar? Coal tar is a black viscous waste product derived from the distillation of coal during the production of steel. In scientific terms, coal tar and other similar substances are called ‘PAHs’ or ‘Polycyclic Aromatic Hydrocarbons.’

What does the science say? Scientists from the U.S. Geological Survey have studied and documented increasing levels of PAHs in the bottom sediments of at least 40 urban lakes across the country. Waterbodies in cities such as Anchorage, Fort Worth, Detroit, Milwaukee, and Boston were involved in an initial study. Polycyclic Aromatic Hydrocarbons (PAHs) come from driveway and roadway sealants as well as from vehicle emissions, crude oil, and power plants. Analysis of data revealed that there is a positive correlation between increased urban sprawl and an increased amount of PAHs found in lake bottom sediments. Coal tar-based sealants were implicated to account for more than half of the PAHs found in the lakes studied. Conversely, the study revealed that lakes with very low PAHs had relatively limited uses of coal tar-based sealants applied to roadways and driveways within their watershed (i.e.; drainage area).

Are PAHs harmful? Dust from driveways and parking lots contaminated with PAHs may prove to be a probable and suspected carcinogen to humans through skin contact and inhalation. Under the authority of the Safe Drinking Water Act, PAHs are regularly analyzed in drinking water. The maximum contaminate level allowed in drinking water is 0.0002 Mg/l. Lakes with watersheds that have significant portions of the landscape covered with coal tar sealants could become toxic to aquatic organisms that live in the region near

the lake bottom. This could cause aquatic organisms to perish. Investigations into the interaction of PAHs with bottom dwelling aquatic organism populations are ongoing.

How do PAHs end up in lakes? You may be wondering, “If the coal tar sealant is applied with a brush and the driveway is cordoned off with caution tape and allowed to dry, how does the toxic material enter a lake?” Researchers have determined that the sealant breaks down into a fine dust due to weathering and normal wear and tear associated with a driveway. The wind can move the dust everywhere. When it rains, the particles of contaminated dust can move towards streams and rivers and may ultimately end up in a lake. Since the particles are heavier than water, they fall down to the lake bottom and get mixed into the sediment. Every year that homeowners dutifully reapply more sealant, more PAHs make their way into our lakes.

Are there PAHs in New Hampshire’s waters? In New Hampshire, PAHs are a concern whenever a dam is removed from a river, especially in urban areas. Some of these dams, dating back to the 1800s, are holding back a great deal of sediment and mud that has accumulated over the years. Unfortunately, accumulated sediment and mud often contains a variety of man-made pollutants. When a dam is removed, any PAHs mixed into the mud could be reactivated and become toxic to aquatic life downstream. A spokesperson for the Dam Bureau at the New Hampshire Department of Environmental Services stated that PAHs have been detected as a result of sediment quality screening for dam removal projects; however, the PAH levels have been below that which would adversely affect aquatic biota or humans.

Are there alternatives to coal tar sealants? There are other products that will work just as well as the coal tar sealants. When purchasing an alternative product at a hardware store, read the product label to make sure that there are no coal tar residues in the container. You can also ask the store owner for the Materials Safety Data Sheet (MSDS) which will list the product’s ingredients and identify any hazardous materials. There are other ways of reducing the amount toxic PAHs to the environment such as only applying sealants to driveways and roadways when really needed. Pervious pavement, which allows rain water and other surface runoff water to soak through it and into the ground, is now readily available in most communities and it does not need sealants.

What’s the take home message? Driveway sealants are not the only hazardous materials that end up on lake bottoms across the country. As caretakers of our lakes, we must all continue to become aware of potential problems such as the sealant phenomenon which could degrade the health of our lakes. We must re-examine our daily activities and yearly rituals (such as sealing the driveway) and change our routines and use alternative products when available, to help keep our lakes clean and healthy.

NH LAKES is the only statewide, member-supported nonprofit organization working to keep New Hampshire’s lakes clean and healthy, now and in the future. The organization works with partners, promotes clean water policies and responsible use, and inspires the public to care for our lakes. For more lake-friendly tips, visit www.nhlakes.org, email info@nhlakes.org, or call 603.226.0299.

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