



DANGEROUS DRIVEWAYS TOXIC PAH POLLUTION FROM TAR-BASED SEALANTS



Tar-based pavement sealants are the primary source of toxic PAH pollution in urban landscapes. Those PAHs are harmful to human health and hurt fish and other aquatic life in our lakes and rivers.

What are pavement sealants?

Pavement sealants, also known as “sealcoats” or “sealers,” are the jet-black coatings homeowners and contractors apply to residential, commercial, and industrial driveways and parking lots. There are two main types of pavement sealants on the market today: tar-based sealants (also called “coal tar-based”), and asphalt-based sealants.

The problem with tar-based pavement sealants

Pavement sealants contain *polycyclic aromatic hydrocarbons* (PAHs), which are toxic compounds that can *cause cancer and developmental problems in children*. The American Medical Association and other public health groups have urged local and state governments to ban tar-based sealants due to their harmful health effects.

How are people exposed to PAHs from tar-based sealants?

PAHs accumulate in soils, household dust, and carpets when particles of tar-based sealants are blown or tracked into homes, schools, and other buildings. The particles come from those sealants being worn down over time by weather, tire abrasion, and foot traffic. The toxic sealant particles are also washed off by rain and spring meltwater, ending up in our local water bodies.

A recent study found that 77% of PAH pollution in Milwaukee streambeds came from tar-based sealants.

How significant is the health risk?

The coal tar pitch used in tar-based sealants is classified as a *hazardous waste*. Children living in homes where parking lots are coated with tar-based pavement sealants face a **14-fold increase in cancer risk** compared to those living next to unsealed lots, according to researchers at Baylor University and the U.S. Geological Survey. *A lifetime of exposure can lead to cancer rates 38 times higher than normal.*

CHILDREN LIVING FROM BIRTH TO AGE 6 NEAR PARKING LOTS WITH TAR-BASED SEALANTS HAVE A **14x HIGHER LIFETIME CANCER RISK**

Current Tar-Based Sealant Bans:

Andover, Massachusetts (use restriction)
Ann Arbor, Michigan
Annapolis/Anne Arundel County, Maryland
Austin, Texas
Bee Cave, Texas
Boone, North Carolina (use restriction)
Cwlth. of Massachusetts (use restriction)
Dane County, Wisconsin
Dexter, Michigan
Edwards Aquifer Authority, Texas
Greenville, South Carolina
Hamburg Township, Michigan
Montgomery County, Maryland
North Barrington, Illinois
Prince George's County, Maryland
San Antonio, Texas
San Marcos, Texas
Scio Township, Michigan
South Barrington, Illinois
Spring Lake Township, Michigan
State of Minnesota
State of Washington
Sudbury, Massachusetts (use restriction)
Suffolk County, New York
Van Buren Township, Michigan
Washington, D.C.
Westwood, Massachusetts
Winfield, Kansas
Winnetka, Illinois
Ypsilanti, Michigan



“Whether sending their children to a playground or repairing a driveway, Americans are potentially being exposed to harmful carcinogens in coal-tar-based sealcoats.”
– American Medical Assoc.

How to be PAH-safe:

Don't use tar-based pavement sealants

If you feel you must seal your driveway or parking lot, then use asphalt-based sealants, which have 1,000-times lower PAH levels.

Remove your shoes

If you don't have control over your parking lot or driveway, try to keep sealant dust and soil out of your house by taking off shoes before entering your home or apartment.

Look for hidden PAHs

Tar can have a lot of different names, and some other byproducts can have very high levels of PAHs. To be safe, check the “Material Safety Data Sheet” of the product (try searching online) and avoid anything including CAS #'s **64742-90-1, 65996-92-1, 65996-93-2, 65996-89-6, 69013-21-4, or 8007-45-2.**

Speak up

Become an advocate in your community against the use of tar-based pavement sealants. More at cleanwisconsin.org/our-work/pah.

Environmental Impacts

PAHs *kill small organisms* living on the bottoms of rivers and streams and can cause tumors in fish and other large aquatic animals. This could result in costly impacts on the ecological balance of aquatic environments. Even three months or more after sealants are applied, the tar-sealed pavement runoff can kill fathead minnows and water fleas, two indicator species used to assess chemical toxicity to aquatic life.

Economic Impacts

PAH pollution from tar-based sealants can be a significant burden to taxpayers when municipalities are on the hook for cleaning up stormwater sediment ponds contaminated with PAH-laden sediment. In the Minneapolis metro area, the PAH cleanup from tar-based sealants is estimated to cost taxpayers hundreds of millions of dollars.

Are there alternatives?

Yes. Asphalt-based pavement sealants have up to 1,000-times lower PAH levels and are no more expensive than tar-based sealants. Alternatives such as acrylic sealants or gravel parking lots and driveways have minimal PAH levels. Studies of an early PAH ban in Austin, Texas, show significant PAH reductions in local waterbodies.

How do tar-based sealants compare to other PAH sources?

Other sources of environmental PAH pollution have significantly lower concentrations than tar-based sealants. Fresh asphalt, for example is about 1.5 parts per million (ppm) PAHs. Smoke from wood fires can range from 2 to 114 ppm, engine exhaust 102-370 ppm, and used motor oil around 440 ppm. **Tar-based sealants are hundreds to thousands of times worse**, at 70,000 – 100,000 ppm.

WISCONSIN NEEDS TO FOLLOW THE LEAD OF OTHERS AND END THE SALE AND USE OF TAR-BASED OR OTHER HIGH-PAH SEALANTS TO PROTECT OUR HEALTH AND ENVIRONMENT.

Visit cleanwisconsin.org/our-work/pah for more information.

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EXAMPLE CONCENTRATIONS IN COMMON SOURCES OF TOXIC PAH POLLUTION

	<u>PRODUCT/ POLLUTANT</u>	<u>PAH CONC. (PPM)(DRY WT.)</u>	<u>% PAH</u>
	Fresh asphalt	1.5	< 0.001%
	Weathered asphalt	3	< 0.001%
	Fresh motor oil	4	< 0.001%
	Brake particles	16	0.002%
	Road dust	24	0.002%
	Tire particles	86	0.009%
	Wood fire smoke (up to)	114	0.01%
	Gasoline engine exhaust	370	0.04%
	Used motor oil	440	0.04%
Asphalt and Alternative Low-PAH Sealants	<i>Bio-Seal/Aexcel Corp</i>	<i>None detected</i>	<i>-</i>
	<i>Eco-Seal/ Rochester, NY</i>	<i>None detected</i>	<i>-</i>
	<i>Carbonplex /EcoStar Science</i>	<i>None detected</i>	<i>-</i>
	<i>Crack Stopper/Gardner Gibson</i>	12	0.001%
	<i>CMS-1P/QB/Western Colloid</i>	59	0.006%
	<i>SafeSeal Michigan</i>	40	0.004%
	<i>Henry Seal 532, Henry Co.</i>	50	0.005%
	Typical Asphalt-Based Sealant	50	0.005%
	<i>GSB 88 Gilsonite/ ASI</i>	215	0.02%
	<i>Paveshield/ NEYRA Industries</i>	694	0.07%
High-PAH Sealants	<i>Jennite AE/NEYRA Industries</i>	1,168	0.17%
	<i>Master Seal/Sealmaster</i>	2,867	0.29%
	<i>Liquid Road/Sealmaster</i>	16,272	1.6%
	<i>Black Diamond/ GemSeal</i>	19,064	1.9%
	Coal Tar Sealant Range	50,000 - 200,000	5-20%