

## Frequently Asked Questions: Coal Tar based Sealcoat

### What is coal tar sealcoat and why is it a human and aquatic health threat?

- Coal tar sealcoat (CTS) is used as an asphalt maintenance practice on low traffic pavement (driveways, parking lots, playgrounds, trails) and it contains 20-35% coal tar
- Coal tar is a thick, black or brown liquid that is a byproduct of the carbonization of coal for the steel industry or the gasification of coal to make coal gas.
- Coal tar sealcoat contains very high concentrations (5-10%) of Polycyclic Aromatic Hydrocarbons (PAHs) which is a class of chemicals that contain known and suspected carcinogens, mutagens and/or teratogens (causing birth defects).
- PAHs are considered persistent bioaccumulative and toxic (PBT) chemicals.

### What is the science behind the need for action?

- Aquatic health: Explicit link now between coal tar runoff and toxicity to aquatic organisms (mortality, cardiotoxicity, DNA damage). Runoff remains acutely toxic for weeks to months after CTS application.
- Human health: Cancer risk estimated at 38 times greater in people who spend their lifetime living near coal tar seal-coated surfaces, especially children because they interact more (play on/near) with the pavement.
- Human health: The International Agency for Research on Cancer lists coal tar pitch (a major component of CTS) as a Group 1 carcinogen, which means it is known to cause cancer in humans.
- Human health: PAHs are correlated with lower IQ, childhood asthma, low birth weight, premature delivery, heart malformations and developmental delays.
- Economic impact: Creating toxic sediments in stormwater systems requiring costly disposal (estimated cost exceeding \$1 billion for clean-up of MN catch basins where PAH testing is required to determine appropriate disposal)

### Is there an alternative to Coal Tar?

- Yes. Asphalt-based sealcoat (ABS) is a readily available alternative. Asphalt-based sealcoats have 1/1000 the PAH content (~50 mg/kg) of coal tar sealcoats (~66,000 mg/kg).
- The price per gallon fluctuates with the cost of petroleum but currently ABS is selling for less than CTS according to SealMaster – a supplier of both types of sealcoat product based in Romulus, Michigan.
- There are a few local businesses that apply only ABS and have built a successful business doing so. Several businesses have been identified that are willing to apply ABS or CTS based on the needs of the customer.
- Another alternative is to avoid any sealcoating. University of Michigan does not use sealcoating to maintain their pavement.

### What actions have others in the area taken?

- **Van Buren Township passed first township wide ban on coal tar and other high PAH sealcoats in Michigan in December 2015.**
- UM banned use on all University properties

- Washtenaw County no longer allows the use of coal tar sealcoat for county projects.
- A number of other municipalities in the area are developing ordinances to ban coal tar and other high PAH sealcoats.
- **Representative Kristy Pagan (D-Canton) introduced HB 5174 to the State of Michigan in December 2015.** Referred to the Natural Resource Committee.
- Several communities are using newsletters, websites, newspapers and/or direct mail to educate residents about the risks of coal tar sealcoats and how to avoid them.

#### What actions have been taken nationwide?

- Austin, TX was first municipal ban ten years ago
- MN, WA and District of Columbia have bans
- Also, dozens of counties, townships and villages throughout the US.  
<https://www.pca.state.mn.us/sites/default/files/tdr-g1-12.pdf>
- Issue has been taken to the USEPA but no action has been taken yet to regulate this substance at the federal level.
- Most major hardware retailers voluntarily stopped stocking coal tar sealcoat products.

#### Do we have evidence that the problem exists here?

- HRWC sampled 3 detention basins in Ann Arbor and found high concentrations of many types of PAH compounds in all three basins. The concentrations often exceeded “probable effects concentrations” which indicate when a toxin is likely to negatively impact aquatic organisms.
  - More detail: Of the ten PAH compounds with scientifically identified “probable effects concentrations” (PEC, i.e. the concentration that results in health impacts or death in aquatic organisms), sediments from the Malletts Creek pond exceeded the PEC for eight PAH compounds! Some of those PAHs are known carcinogens. Sediments in the Traver and Fleming ponds exceeded the PEC for 6 and 4 of the PAH compounds, respectively. In the Malletts Creek sample, the PEC for one PAH was exceeded by more than 10-fold. The bottom line is these detention pond sediments are highly toxic. From an HRWC blog published 12-3-15 <http://www.hrwc.org/2015/12/effects-from-coal-tar-observed/>
- Samples of sediment from behind Peninsular Dam in Ypsi have PAH levels above Probably Effects Concentrations.
- Phone calls to a sampling of applicators in the area confirmed that the product primarily applied for asphalt maintenance is coal tar sealcoat.
- Published scientific studies have traced 50-75% of all PAHs found in Great Lakes sediments to originate from coal tar.

#### Is there opposition to banning CTS?

- The Pavement Coatings Technology Council opposes banning CTS products on the grounds that there is insufficient evidence that coal tar sealcoat is harmful. You can learn more about their position at [www.pavementcouncil.org/](http://www.pavementcouncil.org/)

#### Are bans effective?

- Yes. 10 years after Austin, Texas implemented ban, 58% reduction in PAH levels in lake sediments.

### Why regulate for “other high-PAH sealcoats?”

- Since the backlash against coal tar sealcoat has grown, alternative products have come to market with claims of being “coal tar free” or “environmentally friendly” while still containing high concentrations of PAHs.
- Nerya Force and Black Diamond are two examples. Use steam cracked asphalt or heavy pyrolysis oil (HPO) and is a byproduct of petroleum distillation. Technically it isn't coal tar.
- We recommend regulating any sealcoat product not exceed 0.1% PAH content, by weight. This allows the use of asphalt based sealcoat (which typically has 0.005 – 0.01% PAHs)

### How does this change affect business? Pavement maintenance companies?

- Discussions with industry professionals showed that there are limited barriers to being able to apply asphalt-based sealcoat. The cost of materials is similar. ABS is available from the same location as CTS in most cases. The equipment is the same. Applicators do need to learn the differences to the application process between the two products. Also, applicators may lose some days that they can apply sealcoat as CTS is labeled for application at lower temperatures.
- Washtenaw County bid process was unaffected by requirement to use alternative sealcoat product. They received competitive bids for work using asphalt-based sealcoat.
- Anthony of Anthony’s asphalt, a Dexter based company, has seen business succeed and grow after switch. He is able to provide competitive bids and win jobs.

### How do we enforce a ban?

- Educate residents and other private property owners
- Notify local pavement companies of ordinance and expectations
- Require a permit to work within the municipality including a signed agreement that company will not be using coal tar sealcoat or other high PAH sealcoat products.
- Set penalty high enough that it won’t be considered a business expense.
- Use field test to identify potential infractions. Locate a lab that can analyze sample if field test indicates coal tar.

### What is HRWC advocating?

Homeowners and those who manage grounds for **private entities such as churches, daycares or businesses can help....**

- Eliminate sealcoating as a maintenance practice for asphalt surfaces.
- If sealcoating cannot be eliminated, use asphalt-based sealcoat rather than coal tar sealcoat.

**Municipalities can change policies** and practices....

- Pass an ordinance banning the use of coal tar and other high PAH sealcoat within the municipality.
- Adopt a resolution committing to the reduction or elimination of the use of coal tar sealcoat on city property.
- Adopt a resolution to encourage State legislators to support statewide legislation
- Educate residents and businesses about this issue
- We have sample ordinance language available

For additional information see:

- <http://hrwc.org/coaltar>
- <http://Tx.usgs.gov/sealcoat>
- <https://www.pca.state.mn.us/water/restriction-coal-tar-based-sealants>