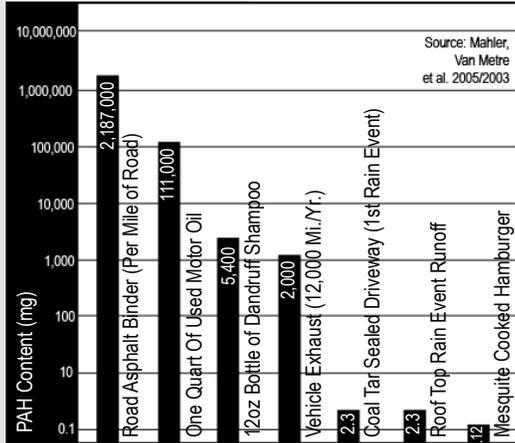


WHAT DO DRIVEWAY SEALERS AND THE FOLLOWING IMAGES HAVE IN COMMON?



The graph above shows PAH loading from differing sources in our every-day environment. It is interesting to see so many widely accepted and unavoidable sources of PAHs that are encountered in our every day life.

PAVEMENT COATINGS

PCATC

TECHNOLOGY COUNCIL



THEY ALL CONTAIN PAHS!



HOW CAN YOU ESCAPE SUCH A WIDE PRESENCE OF PAHS?

WHERE CAN I GET MORE INFORMATION?

The PavementCouncil.org website provides information from the Pavement Coatings Technology Council, a group comprised of manufacturers of pavement maintenance products. It has content consisting of published articles and research about the safety and environmental impact of pavement coatings and general and technical information for the industry professionals. It also has a section with links to official information requests and comments, trade magazine articles and resources for general information on pavement preservation technology.
www.pavementcouncil.org

The Truth About Coal Tar website provides published information about refined tar sealers as well as additional links to industry organizations and manufacturers of pavement sealers.
www.truthaboutcoaltar.com

PAVEMENTCOUNCIL.ORG

SEALCOATINGS “GLOVE BOX” RESOURCE

WHY SEALCOAT?

Asphalt parking lots and driveways are capital investments, increasing the value and functionality of a property. Like any infrastructure investment, the asphalt surface must be maintained to keep both value and functionality over time. Lack of proper maintenance can result in costly repairs or even premature replacement. Proper maintenance has proven to extend the life of asphalt parking lots by as much as 300 percent.

What are the maintenance options? Maintenance options include resurfacing or replacing the asphalt after it has deteriorated or surface treatments, including rejuvenating products and sealcoating. Surface treatments – that is, sealcoating – offer a more proactive and preventative approach to long term maintenance. Sealcoating is a cost effective way to protect and extend the service life of asphalt surfaces.

What does sealcoating do? Sealcoating extends the useful life of an asphalt pavement by protecting it from the natural aging process caused by sunlight (UV rays), water intrusion, vehicular tire wear, and chemical/petrochemical attack. Sealcoating provides excellent protection from damage caused by leaking oil and gasoline, road salts, and other common caustic products. Added benefits are that sealcoating increases the definition of traffic control markings and add to the “curb appeal” of a paved surface, giving it a clean uniform look.

WHAT IS SEALCOATING?

Sealcoating is a protective coating. It works much the way paint protects wood, metal, and other surfaces. The coating, applied to the pavement surface, protects the asphalt binder from degradation from sunlight (UV light turns asphalt pavement from black to gray, while making it weaker and more brittle), chemical attack and water intrusion. Unlike paints, sealcoating is formulated to also provide wear resistance to vehicular traffic. Sand is often added to provide additional wear resistance and provide a more slip resistant surface.

How long has sealcoating been around? The first reported application occurred in 1938. Sealcoating has been an established pavement maintenance for over seven decades.

What is it made from? The majority of pavement sealers are made from either refined tar or asphalt. Refined tar based sealer comes from a selectively refined fraction of crude coke oven tar called RT-12. Similarly, asphalt based sealers are made from a selectively refined fraction of crude oil.

Is there much difference between the two types? They are both emulsions, which means they are a mixture of water, clay, polymers and either refined tar or asphalt. The majority of pavement sealer used today is refined tar based. While research and development has improved the performance of asphalt based sealers, there remains a significant benefit to using refined tar based sealers. Refined tar based sealers are much more resistant to gasoline and oil drippings, damage from weather, and are more resistant to wear than asphalt based sealers and, as such, provide improved durability and value. Only refined tar based sealers are manufactured to ASTM standards for quality and performance.

IS SEALER A HEALTH HAZARD?

Of the two types, refined tar based sealers are currently receiving more negative attention. Claims that they are a “toxic waste” and other sensational stories have circulated online and even been found in the press. In reality, there is a lot of scientific information and data which proves otherwise. Pavement sealer is not manufactured from waste product. Air sampling studies show refined tar based sealers pose no health risk to the people who manufacture them every day.

I've heard it causes cancer. Neither OSHA nor EPA have classified refined tar sealer as hazardous. There have been epidemiology studies done on people working in tar distillation plants (whose exposure is far greater than applicators or consumers) which show no evidence that these workers' cancer risk is increased by their exposure. The IARC (International Agency for Research on Cancer) has not classified RT-12 or refined tar based sealer as a human carcinogen. Although there are media reports that refined tar sealers are hazardous, the reports are based on unfounded claims sensationalizing poorly defined scientific data.

I heard something about it becoming hazardous dust in houses. There was a study by two hydrologists who work for the United States Geological Survey that attempted to tie risks related to PAHs (Polycyclic Aromatic Hydrocarbons) in house dust to pavement sealer. Peer review and a formal request for correction document exaggerations in the study, and raise serious questions about the risk assessment presented in the report. In fact, PAHs are everywhere. They occur naturally in organic materials, and are produced whenever organic substances are heated. In short, PAHs are a natural byproduct of combustion. A quote from The World Health Organization reads: *“Food is a major source of intake of PAHs for the general population. Estimates of PAH intake from food vary widely, ranging from a few nanograms to a few micrograms per person per day. Sources of PAHs in the diet include barbecued/grilled/broiled and smoke-cured meats; roasted, baked and fried foods (high temperature heat processing); breads, cereals and grains (at least in part from gas/flame drying of grains); and vegetables grown in its contaminated soils or with surface contamination from atmospheric fall-out from PAHs...”* The United States Food and Drug Administration has authorized the use of a substance containing high

concentrations of PAHs – coal tar – in soaps, shampoos, and ointments for the treatment of eczema, psoriasis, and dermatitis and these are sold as over-the-counter medications. Medications of this type have been in use for over a century.

Why does it have such a strong smell? The odor of refined tar sealer is easily identifiable. But just because it may smell bad doesn't mean it is bad! The smell is primarily the presence of naphthalene, which the human nose can detect at a very low concentration. The human nose can detect it at a concentration of just 3 parts per billion. For comparison, the level of naphthalene considered safe by the American Conference of Governmental Industrial Hygienists is 10,000 parts per billion. So the difference between being able to smell it and worrying about it possibly causing an adverse health effect is huge.

DOES SEALER HURT THE ENVIRONMENT?

I've heard stories in the news that refined tar based sealers are bad for the environment. Almost all of the controversy about refined tar sealer being a problem for the environment concerns PAHs (Polycyclic Aromatic Hydrocarbons). A study in Austin, TX done in 2005 offered a theory that a significant contributor of PAHs in Austin area streams was from the dried residue of refined tar sealer. As a result, refined tar pavement sealers were banned in Austin, TX. This study, and another by the same authors which claims that refined tar sealer is a major contributor to PAHs in lake sediment, compromise almost all of the evidence cited in the media. Science has proven that these findings and conclusions are flawed. Independent studies have repeatedly concluded, that refined tar sealers pose no risk to health or the environment. The fact remains that refined tar based sealers offer the very best protection and preservation of the costly investment that is asphalt pavement. Here are a few facts, not often reported, worth knowing:

- An independent scientific study shows no noticeable change in PAH levels in the same Austin streams used in the original study over two years after the ban – which is the opposite of what one would expect if refined tar sealers were, in fact, the cause of PAH levels.
- Scientific analysis using a forensic approach shows that, with very few exceptions, the chemical fingerprint of refined tar sealers is not identifiable in sediments tested which contained PAHs.
- Refined tar sealer particles do not move once they have settled. Some people have been concerned that these particles might somehow migrate or travel to a well system nearby in the yard. This is highly unlikely because of the way these particles resist movement and generally stay put once they have settled into the soil.
- Refined tar sealer particles are not considered to be bio-available. They are insoluble in water, so they are not easily absorbed by any organism – including humans – when the organism comes into contact with the particles.

I've heard refined tar sealer has been banned in some areas. The question should be: Why have they been banned? Legislators in some areas, alarmed by a small number of activists promoting the conclusions in the original Austin study considered bans of refined tar sealer in their constituencies.



SEALCOATING “GLOVE BOX” RESOURCE

This Sealcoating Glove Box Booklet is intended to be a resource to help users respond easily and intelligently to common sealcoating questions on topics such as application, economics, types available, and health and environmental hazards. This booklet is made up of short “bullet point” items that can be readily found and used in conversation if needed.



and without first determining whether there was an actual problem. Some of these bans were actually enacted without regard to sound science which needed to be addressed. In many respects, it was a classic “shoot first and ask questions later” scenario. Those who opposed the bans were given limited opportunity to present a point of view that would allow for more balanced consideration. Scientific study is ongoing. More recent research directly refuting the Austin study results may make it more difficult for activists to push through legislation based on a one-sided view in the future. And documents obtained in a Freedom of Information Act request show how the data in the original Austin study was manipulated to implicate refined tar sealer.

I've read that asphalt emulsion based pavement sealer is safe. Is this true? Both asphalt and refined tar based sealers contain PAHs. As a practical matter, asphalt contains fewer PAHs, but need to be applied more frequently. If the goal really is to eliminate PAHs from the environment, then favoring asphalt over refined tar based sealers doesn't provide a solution. As substantiated by numerous recent studies, the risks to health or the environment posed by either asphalt or refined tar based sealers have been greatly exaggerated.

WHO IS PCTC?

The Pavement Coatings Technology Council (PCTC) represents members who are pavement sealer manufacturers and their suppliers. PCTC members are dedicated to extending the life of asphalt through maintaining the highest quality manufacturing and application standards. PCTC's mission includes funding science & engineering research to better understand and improve safety, health, and environmental performance. Publications resulting from PCTC funded research are available on our website:

www.pavementcouncil.org

PCTC is also involved in working to promote the truth about using coal tar based sealers in areas where the use of such products is being attacked by groups touting flawed science. PCTC works closely with the major manufacturers of sealcoating materials in North America, the suppliers of raw materials to the industry and also with many of the professional applicators in the industry.