Coal Tar-Based Asphalt Sealcoats - A Health and Environmental Hazard

Asphalt sealcoats are used to improve the appearance and prolong the life of driveways and parking lots. Most of us are familiar with the heady odor and deep black appearance of freshly sealcoated asphalt. However, some sealcoat products contain coal tar, a byproduct of coke manufacturing. This fact sheet discusses the toxicity, health and environmental hazards of coal tar, and suggests ways to reduce risk.


- Van Metre

Coal Tar Toxicity

Coal tar is a complex chemical mixture that includes polycyclic aromatic hydrocarbons (PAHs), a class of chemical known to cause cancer. Preferred by many sealcoat applicators because of its superior pavement bonding properties, coal tar (RT-12) has been blended into asphalt sealcoats for many years. RT-12 coal tar typically contains more than a dozen toxic PAH's that have been determined to be: confirmed human carcinogens (ACGIH); potential occupational carcinogens (NIOSH); known human carcinogens (NTP); and/or carcinogenic to humans (IARC)[1]. Types of cancer that may be caused by coal tar used in sealcoats (cited by the manufacturer) include: blood, kidney, liver, lung, scrotal, skin and stomach cancers.

The Health Hazard

The risk from cancer causing chemicals depends on human exposure. Exposure to PAHs in asphalt sealcoats can come in several ways. For example, sealcoat applicators can suffer from occupational exposure when handling or applying coal-tar-based sealcoat products. This exposure is regulated by the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA).

There is also a need to protect the general public from exposure to PAHs resulting from coal tar-based asphalt sealant dust and vapor. Research[2] by the United States Geological Survey, Baylor University, Minnesota Pollution Control Agency, City of Austin Texas and University of New Hampshire shows that PAHs in coal tar-based asphalt sealants applied to driveways, parking lots or playgrounds can find their way into schools and homes, potentially exposing children and adults to toxic carcinogens via skin contact, ingestion or inhalation.

The Environmental Hazard

Coal tar-based sealant residue can also find its way into stormwater runoff from deteriorating sealcoat on asphalt parking lots and driveways. PAH contaminated runoff into lakes and streams contaminates aquatic life and can enter the food chain[3]. PAH contaminated sediment that accumulates in stormwater detention ponds can require removal and disposal as a hazardous material, increasing costs for municipalities and private land owners.

Managing Risk from Coal Tar-Based Sealcoats

Eliminating the use of coal tar-based asphalt sealcoats can (over time) reduce the health and environmental risk from these products, thus communities around the country are banning their use. In Wisconsin, Dane County has prohibited the sale or application of coal tar-based asphalt sealants. Asphalt sealcoat applicators in these communities are able to use alternative sealcoat products that provide similar performance and cost, without coal tar's carcinogenic properties.

Consumers (homeowners, businesses, schools, churches and municipalities) can insist that only non-coal tar-based sealants be used on their asphalt surfaces. Many home improvement stores now offer coal tar-free asphalt sealants. Before you apply asphalt sealant, or contract with a sealcoat applicator, be sure that the sealcoat used is free of coal tar compounds.

For more information on preventing the use of coal tar-based sealants

Dane County, WI Ordinance 80.08 – *Regulation of the Application and Sale of Sealcoat Products Containing Coal Tar*
http://pdf.countyofdane.com/ordinances/ord080.pdf

USEPA's coal tar-based asphalt sealant and stormwater webpage
http://cfpub2.epa.gov/npdes/courseinfo.cfm?program_id=0&outreach_id=645&schedule_id=1169

Thinking about Sealcoating your Driveway? Get the Facts!
http://www.unh.edu/unhsc/sites/unh.edu.unhsc/files/UNHSC%20Seagrant%20sealcoat%20fact%20sheet.pdf

Coal Tar-Based Pavement Sealcoat, Polycyclic Aromatic Hydrocarbons (PAHs), and Environmental Health
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