

PAVEMENT SEALANTS AND PAHs

PUBLIC HEALTH CONCERNS



SCIENCE BRIEFING, AUGUST 2017

Background

- Polycyclic aromatic hydrocarbons (PAHs) are a widespread pollutant that are carcinogenic¹ and have been linked to cognitive development problems.²
- Coal tar is a known human carcinogen³ with half of its weight coming from PAHs.⁴
- Commonly-used pavement sealants are 15-35% coal tar, meaning that they are 7-18% PAHs by weight.⁴

Human Exposure

- House dust in apartments with sealed parking lots was found to contain 25x more PAHs than dust in apartments with unsealed parking lots.⁴
- Living adjacent to sealed parking lots from birth to age 6 is estimated to increase lifetime cancer risk estimated by 14x due to ingestion of PAH-contaminated house dust and soil.⁵
- Health Canada found that “the margins of exposures associated with ingestion of house dust by children is considered potentially inadequate to protect these susceptible subpopulations” as part of an evaluation concluding that coal tar poses a danger to human health.⁶

Examples of Health Care Entities Supporting Sealant Bans

- American Medical Association
“RESOLVED, That our American Medical Association advocate for national legislation to ban the use of pavement sealcoats that contain polycyclic aromatic hydrocarbons”
- New York City, Chicago, Texas and Maine chapters of Physicians for Social Responsibility
“There is significant evidence provided by peer-reviewed studies from independent sources, universities, and governmental agencies to illustrate that the use of coal tar sealants is detrimental to the environment and to human health.”⁸
- Chicago Department of Public Health
“The Chicago Department of Public Health supports the proposed ordinance to prohibit the sale and use of coal tar sealants. CDPH believes the research warrants the attention of policy makers and it provides a solid evidence base for the proposed ban or other measures to address the adverse health impact of coal tar sealants.”⁹
- Connecticut Department of Public Health
“The CT DPH recommends against the application of coal tar-based road sealants because they can increase human exposure to carcinogenic polycyclic aromatic hydrocarbons in certain outdoor and indoor settings...A public health goal is to minimize PAH levels in the environment and decrease exposures to children and other human receptors. Coal tar-based road and driveway sealants represent an unnecessary source of PAHs given that there are safer alternatives.”¹⁰
- The Illinois chapter of the American Academy of Pediatrics, the Illinois State Medical Society, and the Respiratory Health Association all support a current bill to ban high PAH sealants in Illinois.¹¹

References

- [1] United States Environmental Protection Agency. n.d. Integrated Risk Information System (IRIS). Available at: <https://www.epa.gov/iris>. Last accessed August 22, 2017.
- [2] See, e.g., Perrera FP, Zhigang L, Whyatt R, Hoepner L, Wang, S, Camann D, Rauh V. 2009. Prenatal Airborne Polycyclic Aromatic Hydrocarbon Exposure and Child IQ at Age 5 Years. *Pediatrics* 124: 195-202; Edwards SC, Jedrychowski W, Butscher M, Camann D, Kieltyka A, Mroz E, Flak E, Li Z, Wang S, Rauh V, Perera F. 2010. Prenatal exposure to airborne polycyclic aromatic hydrocarbons and children's intelligence at 5 years of age in a prospective cohort study in Poland. *Environmental Health Perspectives* 118: 1326-1331.
- [3] International Agency for Research on Cancer. 2012. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 100F: Coal-Tar Pitch. Available at: <https://monographs.iarc.fr/ENG/Monographs/vol100F/> Last accessed August 22, 2017.
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- [5] Williams ES, Mahler BJ, Van Metre PC. 2013. Cancer risk from incidental ingestion exposures to PAHs associated with coal-tar-sealed pavement. *Environmental Science & Technology* 47: 1101-1109.
- [6] Environment Canada and Health Canada. 2015. Draft Screening Assessment: Coal tars and their distillates. Available at: <http://www.ec.gc.ca/esc-ees/default.asp?lang=En&n=E34B0A52-1>. Last accessed August 22, 2017.
- [7] American Medical Association. 2016. Resolution 919 (I-16): Coal-Tar-Based Sealcoat Threat to Human Health and the Environment. Available at: <https://assets.ama-assn.org/sub/meeting/documents/i16-resolution-919.pdf>; For a press release on the resolution's adoption see <https://www.ama-assn.org/ama-urges-legislation-ban-dangerous-coal-tar-sealcoats>. Last accessed August 22, 2017.
- [8] New York City Chapter of the Physicians for Social Responsibility. 2013. Letter to Assemblymember Linda Rosenthal entitled "Re: New York Assembly Bill A630-2013, Prohibition of the Sale and Use of Coal Tar Pavement Products."
- [9] Chicago Department of Public Health. 2013. Written testimony of Dr. Cortland Lohff, Medical Director for Environmental Health, Chicago Department of Public Health. Chicago City Council Committee on Finance, June 7, 2013.
- [10] Connecticut Department of Public Health. 2016. Letter from Brian Toal, Supervisor, Environmental and Occupational Health Assessment to Local Health Directors entitled "Important Reminder Regarding Coal Tar Sealants for Road Repair." EHS Circular Letter # 2016-49. November 1, 2016.
- [11] Sierra Club of Illinois. n.d. Coal tar sealants: risks to health & environment. Available at: <https://illinois.sierraclub.org/sites/illinois.sierraclub.org/files/documents/2017/03/CoalTarSealant%20%281%29.pdf>. Last accessed August 22, 2017.