

HB0553 Environment - Sale and Application of Coal Tar Pavement Products - Prohibition
Environment and Transportation Committee
February 26, 2020 Support
Testimony of Joel Hurewitz

In their testimony before the Howard County Council and last year before the Environment and Transportation Committee for HB0411, the opponents of the coal tar bans have criticized the studies of the United States Geological Survey (USGS) and/or claimed that there were no studies that showed that coal tar was hazardous to human health. This memorandum will show that there are numerous studies by several different organizations that have concluded that coal tar is hazardous and considered a carcinogen, including documents from a Maryland manufacturer.

International Agency for Research on Cancer

The International Agency for Research on Cancer (IARC) has concluded that coal tar pavement sealers are a carcinogen: “**2. Cancer in Humans** In IARC Monograph Volume 92 (IARC, 2010) it was *concluded that there is sufficient evidence in humans for the carcinogenicity of occupational exposures during paving and roofing with coal-tar pitch.* This was based on studies of pavers and roofers who presumably had been exposed to coal-tar pitch (and often also to bitumen), which suggested *increased cancer risks in these occupations.* . . . Since the previous evaluation (IARC, 2010) a few additional studies have been published with information on paving with coal-tar pitch and associated cancers.” IARC Monographs -100F Coal-Tar Pitch (emphasis added) p. 163-164. <https://monographs.iarc.fr/wp-content/uploads/2018/06/mono100F-17.pdf> In addition, the IARC also reports that coal-tar pitch studies caused cancer in mice: ”**3. Cancer in Experimental Animals** Six coal-tar pitches and three extracts of coal-tar pitches all produced skin tumours, including carcinomas, when applied to the skin of mice.” *Ibid* at p. 164.

The USGS Studies

The USGS studies have concluded that parking lot sealers contain PAHs and are suspected human carcinogens: “**Abstract** Studies by the U.S. Geological Survey (USGS) have identified coal-tar-based sealcoat-the black, viscous liquid sprayed or painted on asphalt pavement such as parking lots-as a major source of polycyclic aromatic hydrocarbon (PAH) contamination in urban areas for large parts of the Nation. Several PAHs are suspected human carcinogens and are toxic to aquatic life.” <https://pubs.er.usgs.gov/publication/fs20113010> and <https://pubs.usgs.gov/fs/2011/3010/> The USGS report “Coal-Tar-Based Pavement Sealcoat, Polycyclic Aromatic Hydrocarbons (PAHs), and Environmental Health” again restates the above-quoted statement. Page 1 <https://pubs.usgs.gov/fs/2011/3010/pdf/fs2011-3010.pdf>

The study “Coal-Tar-Based Pavement Sealcoat and PAHs: Implications for the Environment, Human Health, and Stormwater Management” (Mahler/Van Metre) specifically states: “Coal-tar-based sealcoat products, widely used in the central and eastern U.S. on parking lots, driveways, and even playgrounds, are typically 20–35% coal-tar pitch, a known human carcinogen that contains about 200 polycyclic aromatic hydrocarbon (PAH) compounds.” <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3308201/>

In the section entitled “Coal-Tar Based Sealcoat: A Newly Identified Source of PAHs: the study states:

“Coal-tar pitch, a known (Group 1) human carcinogen, is the residue remaining after the distillation of crude coal-tar (a byproduct of the coking of coal), and contains about 200 PAH compounds. Most coal-tar-based sealcoat products consist of 20–35% coal-tar pitch as the binder. Asphalt is the residue remaining after the distillation of crude oil and is the binder in asphalt-based sealcoat products. Although the two sealcoat product types are similar in appearance, PAH concentrations in coal-tar-based sealcoat are about 1000 times higher than those in asphalt-based sealcoat.”

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3308201/>

In the section “Human-Health Concerns” is the statement: “coal-tar and coal-tar pitch are listed as Group 1 (carcinogenic to humans) carcinogens, and the U.S. EPA currently classifies seven PAH compounds as probable human carcinogens (Group B2): benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene. coal-tar itself is a powerful mutagen: The mutagenicity index for coal-tar is about 1000 times that of asphalt cements.” <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3308201/>

In summary, contrary to the anticipated assertion of the opponents of HB0553 that USGS studies are flawed, the research studies of Mahler and Van Metre have been cited with approval and/or support in several other studies which are listed on this webpage of the National Center for Biotechnology Information, U.S. National Library of Medicine:

The screenshot shows the NCBI PMC website interface. At the top, there is a navigation bar with "NCBI Resources" and "How To" menus, and a "Sign in to NCBI" link. Below this is a search bar with "PMC" selected in the dropdown and a "Search" button. The main content area is titled "Journal List > Cited By ...". It lists four articles that cite the article with PMID 3308201. Each entry includes the article title, authors, journal information, and links for "Article", "PubReader", "PDF", and "Citation".

Journal List > Cited By ...

[Coal-Tar-Based Pavement Sealcoat and PAHs: Implications for the Environment, Human Health, and Stormwater Management](#)
Barbara J. Mahler, Peter C. Van Metre, Judy L. Crane, Alison W. Watts, Mateo Scoggins, E. Spencer Williams
Environ Sci Technol. 2012 Mar 20; 46(6): 3039–3045. Published online 2012 Jan 24. doi: 10.1021/es203699x
PMCID: PMC3308201
[Article](#) [PubReader](#) [PDF-1.8M](#) [Citation](#)

Is Cited by the Following 4 Articles in this Archive:

[Oral exposure to commercially available coal tar-based pavement sealcoat induces murine genetic damage and mutations](#)
Alexandra S. Long, Margaret Watson, Volker M. Arit, Paul A. White
Environ Mol Mutagen. 2016 Aug; 57(7): 535–545. Published online 2016 Jul 30. doi: 10.1002/em.22032
PMCID: PMC4979669
[Article](#) [PubReader](#) [PDF-256K](#) [Citation](#)

[Identification and Toxicological Evaluation of Unsubstituted PAHs and Novel PAH Derivatives in Pavement Sealcoat Products](#)
Ivan Titaley, Anna Chlebowski, Lisa Truong, Robert L. Tanguay, Staci L. Massey Simonicha
Environ Sci Technol Lett. 2016; 3(6): 234–242. Published online 2016 Apr 25.
PMCID: PMC6075866
[Article](#) [PubReader](#) [PDF-1.6M](#) [Citation](#)

[Developmental toxicity and DNA damage from exposure to parking lot runoff retention pond samples in the Japanese Medaka \(*Oryzias latipes*\)](#)
Meryl D. Colton, Kevin W.H. Kwok, Jennifer A. Brandon, Isaac H. Warren, Ian T. Ryde, Ellen M. Cooper, David E. Hinton, Daniel Rittschof, Joel N. Meyer
Mar Environ Res. Author manuscript; available in PMC 2015 Jan 28.
Published in final edited form as: Mar Environ Res. 2014 Aug; 99: 117–124. Published online 2014 Apr 26. doi: 10.1016/j.marenvres.2014.04.007
PMCID: PMC4309550
[Article](#) [PubReader](#) [PDF-297K](#) [Citation](#)

[Studies Raise Questions about Pavement Sealers](#)
Bob Weinhold
Environ Health Perspect. 2012 May; 120(5): a192–a193. Published online 2012 May 1. doi: 10.1289/ehp.120-a192a
PMCID: PMC3346797
[Article](#) [PubReader](#) [PDF-297K](#) [Citation](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3308201/citedby/>

OSHA

The United States Occupational Safety and Health Administration also has acknowledged the hazards of coal-tar. This webpage lists numerous studies:

<https://www.osha.gov/SLTC/coalpitchvolatiles/hazards.html> The heading states: “**Hazard Recognition** coal-tar pitch volatiles (CTPVs) are found in the industry when heating of coal-tar or coal-tar pitch takes place. Once the pitch is heated, chemicals vaporize and may be inhaled by workers. Industries where workers are potentially exposed to CTPVs include coking, roofing, *road paving*, aluminum smelting, wood preserving and any others where coal-tar is used. The following links provide information about the health effects of CTPVs:” (emphasis added).

GemSeal's Safety Data Sheets Show That Coal-Tar Products Are Carcinogens

Manufacturer GemSeal's technical sheets states that “GemSeal Pro-Blend is a premium concentrate, formulated by emulsification of refined *coal-tar* and asphalt resins”(emphasis added)

https://www.gemsealproducts.com/wp-content/uploads/2016/05/ProBlend_6-17.pdf The company's own safety data sheet states that GemSeal Pro-Blend is listed a potential mutagen and carcinogen.

<https://www.gemsealproducts.com/wp-content/uploads/2016/05/pro-blend-sds.pdf>



Technical Data

Pro-Blend Pavement Sealer Concentrate

DESCRIPTION:

GemSeal® Pro-Blend is a premium concentrate, formulated by emulsification of refined coal tar and asphalt resins, designed for application to asphalt pavement surfaces. GemSeal® Pro-Blend extends the service life and enhances the appearance to provide a cost effective preventive maintenance coating.



GemSeal® Pro-Blend

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 02/01/2016 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name: GemSeal® Pro-Blend
Product code : 60310023 – 5 gal

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Various.

1.3. Details of the supplier of the safety data sheet

GemSeal Pavement Products
3700 Arco Corporate Drive, Suite 425
Charlotte, NC 28273 - USA
T 866-264-8273 Tech Service: Monday - Friday; 8:00am - 5:00pm EST

1.4. Emergency telephone number

Emergency number : CHEMTREC (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Eye Irritation 2A
Skin Sensitization 1
Germ Cell Mutagenicity 1B
Carcinogenicity 1A
Reproductive Toxicity 1B
Specific target organ toxicity — Repeated exposure, Category 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Hazard statements (GHS-US) :

May cause an allergic skin reaction. Causes serious eye irritation. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS-US) :

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If exposed or concerned: Get medical advice/attention. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

33 % of the mixture consists of ingredient(s) of unknown acute toxicity.

Conclusion

Therefore, the claims by any opponents of HB0553 that there is not evidence that coal tar is a carcinogen or hazardous should be disregarded. The Committee should give a Favorable Report.