

HB1147: Environment - Playground Surfacing Materials - Prohibitions
House Environment and Transportation Committee

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Position: FAVORABLE

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Good afternoon, Chair Korman, Vice Chair Boyce and honorable members of the House Environment and Transportation Committee.

I am here virtually to support HB1147, to establish limits on three dangerous chemicals in playground materials: Lead, PAHs and PFAS.

I request that this committee vote favorable for HB1147.

I taught biostatistics and epidemiology at Johns Hopkins University and also have a MS in Mechanical Engineer. But today, my key credential is that 45 years ago we bought our home three houses from a playground where our four children played frequently. Now our grandchildren play on public playgrounds near their homes. Playgrounds need to be safe for our children. There need to be strict standards for the level of toxic materials in playground surfaces. Toxic materials in the surface increase the cumulative exposure for our youngest children.

This bill creates a set of measurable standards for safer playgrounds for our most vulnerable community members: children. Importantly, the obligation for showing compliance with these protective standards rests with the parties best situated to formulate the materials to be used, namely the producers and suppliers.

There is no statewide inventory of Maryland's playgrounds that documents their surface materials. Playgrounds may have play surfaces covered in natural and/or synthetic materials which are now required to be [ADA-compliant surfaces](#) include natural-surface materials like [engineered wood fiber](#) (EWF) and synthetic [poured-in-place](#) (PIP) surfaces. Playgrounds may also have loose fill material such as shredded mulch or loose tire 'chunks' or 'shreds.'

The increasing use of PIP and other forms of tires is concerning. [Years of research](#) confirm that tires contain alarming levels of **carcinogens**, **heavy metals** and **endocrine disruptors**, as well as contributing to **microplastic contamination** of air, soil and water.

HB1147 regulates playgrounds to protect children from toxic exposure:

Children, and especially younger children, are uniquely vulnerable to the health effects of toxic environmental exposures, which can occur through ingestion, inhalation or dermal uptake. This vulnerability is due in part to their close interaction with playground surfaces, the developmentally appropriate tendency to put their hands or objects in their mouths, their rapidly developing organ systems, and their immature detoxification mechanisms. Children also [breathe faster](#) per pound of body weight increasing the likelihood of inhalation exposure.

Materials with high levels of lead, PAHs and/or PFAS are unacceptable for use on playgrounds:

It is important to note that while the three chemicals proposed in this bill can be measured separately, a child's exposure is cumulative, and synergistic.

1. Lead:

Of the three chemicals addressed in HB1147, lead is the most studied. According to the [Centers for Disease Control and Prevention](#) and the [World Health Organization](#), there is no known safe level of lead exposure. Relatively low levels of lead exposure that were previously considered 'safe' have been shown to damage children's health and impair their cognitive development

The [effects of this neurotoxicant](#) are well documented and include

- Developmental delay and learning difficulties
- Weight loss, sluggishness and fatigue
- Abdominal pain, vomiting, constipation
- Hearing loss, seizures, unconsciousness

And at high levels [lead poisoning can be fatal](#).

Even very low levels of exposure can cause this damage over time. As observed across the medical field, the only [solution to lead poisoning is prevention](#). HB1147 moves us significantly toward that goal.

Many children visit playgrounds several times a week or even daily from a very early age, continuing on through elementary school exposure during recess and at before- and after-school activities.

In the DMV area, local jurisdictions have struggled for at least five years with community-led finding of high lead levels in local playgrounds and schools, including in [Montgomery County](#), [Prince George's County](#), and [Washington, D.C.](#)

2. Polycyclic Aromatic Hydrocarbons - PAHs

[Polycyclic aromatic hydrocarbons](#) (PAHs) are a class of [over 100 chemicals](#) that occur naturally in coal, crude oil, and gasoline. They result from burning, especially the incomplete burning, of coal, oil, gas, wood, garbage, and tobacco.

According to a peer-reviewed, published study,

“Noticeably, [cancer risk is approximately 10 times higher](#) in poured rubber surfaced playgrounds than in uncovered soil playgrounds.” The authors also write that “skin is the primary site of direct contact with PAH derivatives” while noting that the [“carcinogenic abilities of the derivatives are usually 10 to 1,000-fold higher](#) than that of parent PAHs.”

PAHs are recognized as a [“widespread environmental carcinogen”](#) and PAHs in ambient air are associated with [increased cancer incidence](#) in exposed populations. “Positive associations have been reported between ambient PAHs and [breast cancer, childhood cancers and lung cancer](#). Epidemiological studies have shown that PAHs are associated with reduced lung function, exacerbation of asthma, and increased rates of obstructive lung diseases and cardiovascular diseases. Limited epidemiological evidence also suggests adverse effects on cognitive or behavioral function in children.” The European Union has enacted [strict limits on PAH exposure](#), including specifically rubber granules and mulches used as infill on artificial sports pitches and [playgrounds](#).

A [peer-reviewed, published study](#) over a decade ago confirmed “the presence of a large number of hazardous substances including PAHs, phthalates, antioxidants (e.g. BHT, phenols), benzothiazole and derivatives,” citing the “high content of toxic chemicals.” “The analysis of commercial pavers (recycled rubber tire tiles) showed unexpected results with extremely high PAH levels [...] All the 16 priority PAHs were found in all the samples...”

It concludes that given “the presence of a high number of harmful compounds, frequently at high or extremely high levels, in these recycled rubber materials [they] should be carefully controlled, and their final use should be [restricted or even prohibited in some cases](#).”

3. Per- and Polyfluoroalkyl Substances - PFAS

PFAS refers to a class of 12,000 or more chemicals known to provide heat, stain and water resistance. Because their strong carbon-fluorine bond is difficult to break down, they are referred to as “forever chemicals.”

PFAS have been linked to a wide range of health problems in animal and human studies including kidney and testicular cancer, hormone and endocrine disruption, liver and thyroid problems, reduced vaccine effectiveness, reproductive harm and abnormal fetal development. As the science has evolved, the EPA-issued health advisories reflect findings that they are more toxic at

lower levels than scientists previously knew. While there is little evidence yet of PFAS linked specifically to tires, there are certainly questions: No less than the NFL Players Association medical director [called on manufacturers to disclose](#) if there is PFAS present in the plastic carpet *or infill material* - meaning pulverized tires. And the questions continue to mount. In 2023, over [270 PFAS-related bills](#) were introduced in state legislatures.

More recently...

** [More recently](#), tires were identified as the source of [95% mortality](#) among endangered coho salmon due to an additive, [6PPD](#), found in all tires. While 6PPD is not addressed in HB1147, it adds to the weight of concerns created by exposing children to these surfaces. A 2022 study found 6PPD in urine samples from adults, children and pregnant women. The authors wrote: "Considering that 6PPD-Q was a lethal toxicant to multiple aquatic species, the potential human health risks posed by its long-term exposure [require urgent attention](#)."

Conclusion

Maryland needs HB1147 because the science on the toxic load of tire-based playgrounds has only grown. This bill is an important step in setting safety standards on materials commonly used across our state. By enacting HB1147, Maryland can secure safer playgrounds, healthier children, and a healthier environment.

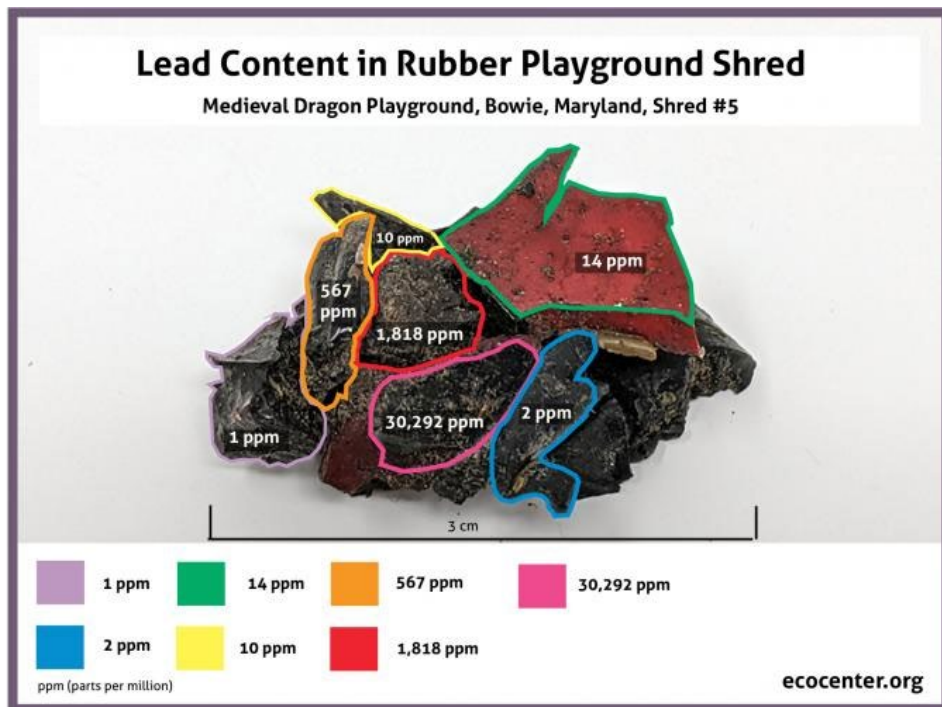
As the national leaders in epidemiology and pediatrics of the Icahn School of Medicine at Mount Sinai concluded, "**given the hazards associated with recycled tire rubber, it is our recommendation that [these products never be used](#) as surfaces where children play.**"

I respectfully urge a favorable report for HB1147.

Sincerely
Sheldon Fishman



<https://thewash.org/2019/11/06/slow-city-response-to-dangerous-playground-conditions/>



<https://www.ecocenter.org/new-study-lead-crumb-rubber-playgrounds-maryland-and-virginia>



As unitary synthetic surfacing begins to age, it may deteriorate and expose the loose-fill cushioning layer underneath. This layer is typically made with shredded waste tires.