

# Healthy Legacy

Healthy people,  
a clean environment  
and a thriving economy

## Moratorium on Use of Recycled Waste Tires in Playgrounds & Athletic Fields

Healthy Legacy supports a policy to prevent potential adverse health effects to children and athletes from exposure to shredded waste tire mulch in playgrounds and athletic fields.

This bill will:

- Establish a moratorium on the use of public funds for new playgrounds and athletic fields using shredded tire mulch or crumb rubber infill until July 2019.
- Requires the Minnesota Department of Health to review and evaluate a report to be issued by the California Office of Environmental Health Hazard Assessment<sup>1</sup> and report back to the Minnesota legislature on potential health risks to children and athletes of continued use of waste tires for playgrounds and athletic fields.
- Require signage to caution users of existing playgrounds and athletic fields of potential exposure and ways to reduce exposure to toxins in waste tire material.

### Safer Playground and Synthetic Turf Materials

#### Playground Alternative

Engineered wood fiber (EWF) is a safer and less expensive alternative to shredded tire mulch for use on playgrounds, with comparable fall protection. EWF is made from 100% virgin wood fiber and is not chemically treated in any way.

#### Synthetic Turf Alternative, Natural Grass Turf



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**This bill is an important step in addressing potentially harmful exposures of children and athletes to known toxic chemicals while they are at play.**  
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## Recycling of Waste Tires

Nearly 300 million car and truck tires are discarded every year, about one for every person. To address the problem of tire stockpiles emitting hazardous compounds into the environment, since 1995 the U.S. EPA has been encouraging the recycling of waste tires into playground mulch and synthetic turf athletic field infill. Although waste tires meet the Resource Conservation and Recovery Act's criteria for hazardous waste, they have received a special exemption for these uses.

Waste tires are ground up into pieces for use as playground mulch and processed into smaller pieces known as "crumb rubber" for use as synthetic turf infill. Use of recycled waste tires has grown over the last two decades. Thousands of playgrounds across the U.S. use shredded tire mulch as cushioning under outdoor play equipment. This includes nearly all Minneapolis public school playgrounds. Ninety-five percent of the over 12,000 synthetic turf fields in the U.S. use crumb rubber infill.<sup>2</sup>

To leave a healthy legacy, Minnesota needs safe products and safe ways to make them.

## Toxic Chemicals Detected in Recycled Waste Tire Materials

According to a chemical analysis conducted by Yale University,<sup>3</sup> 96 chemicals were found in samples of shredded rubber tire playground mulch. For half of these chemicals, there is no government testing – so whether they are safe for human health is unknown.

- Chemicals detected in shredded tire material include carcinogens, neurotoxins, respiratory/eye/skin irritants and reproductive and developmental toxins.
- Chemicals detected include the brain toxins styrene, lead and cadmium, as well as carcinogens, arsenic, pyrene, carbon black, polycyclic hydrocarbons (PAHs), and butadiene.
- Another study confirms the presence of hazardous chemicals in tire mulch, including PAHs that are released through volatilization and can be inhaled. The authors caution, “Uses of recycled rubber tires, especially those targeting play areas and other facilities for children, should be a matter of regulatory concern.”<sup>4</sup>
- Athletes playing on synthetic turf are exposed to chronic toxicity from PAHs, known carcinogens.<sup>5</sup> When the material gets hot, off-gassing of volatile organic compounds (VOCs) into the air increases.
- There is concern that soccer goalies with chronic exposure to crumb rubber on synthetic turf fields may be at higher risk for lymphoma and leukemia cancers.<sup>6</sup>

### Contact us for more information:

- Jenna Grove •  
jgrove@cleanwater.org  
612-627-1539
- Kathleen Schuler •  
Kathleen@conservationminnesota.org  
612-767-1570

*“Children go to playgrounds almost daily, and gifted athletes are on the soccer field almost every day. That sort of cumulative exposure results in a buildup in their body of these toxic chemicals, and can result in a buildup of cellular damage that’s caused by these chemicals, that can then result in disease years or decades later. Little children should not be put in a situation where they’re forced to be in intimate contact with carcinogenic chemicals.”*

**Dr. Philip Landrigan**

Dean of Global Health at Mount Sinai Medical Center and leading expert on the effects of chemicals on children.



### Citations

<sup>1</sup>Office of Environmental Health Hazard Assessment (OEHHA) California Environmental Protection Agency <http://oehha.ca.gov/risk/SyntheticTurfStudies.html>

<sup>2</sup>U.S. EPA. Federal Research Action Plan on Recycled Tire Crumb Used on Playing Fields and Playgrounds- Status Report. December 2016. EPA/600/R-16/364.

<sup>3</sup>Environment & Human Health, Inc., 2007 [http://www.ehhi.org/turf/metal\\_analysis2016.shtml](http://www.ehhi.org/turf/metal_analysis2016.shtml)

<sup>4</sup>Llompert M, Sanchez-Prado L, Lamas JP, Garcia-Jares c et al. Hazardous organic chemicals in rubber recycled tire playgrounds and pavers. Chemosphere 2013;90:423-31.

<sup>5</sup>Marsili L, Coppola D, Bianchi N, Maltese S et al. release of polycyclic aromatic hydrocarbons and heavy metals from rubber crumb in synthetic turf fields: preliminary hazard assessment for athletes. Environmental & Analytical Toxicology 2014;5(2):265.

<sup>6</sup>NBC News Investigation <http://www.nbcnews.com/news/investigations/how-safe-artificial-turf-your-child-plays-n220166>

<sup>7</sup>NBC News, used with permission of Dr. Landrigan <http://www.nbcnews.com/news/investigations/rubber-mulch-safe-surface-your-childs-playground-n258586>