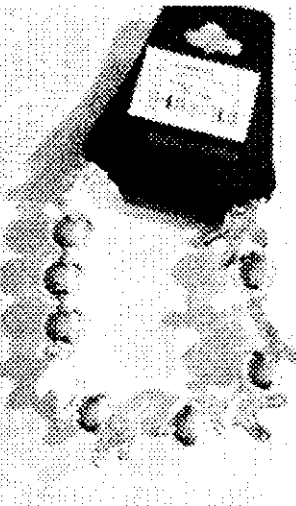
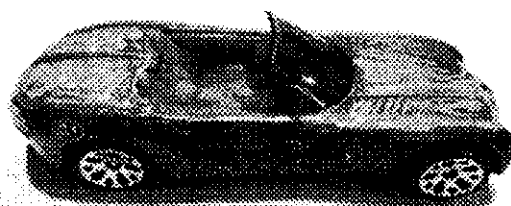


Empire State Consumer Project 2015 Children's Products Safety Report



**Empire State Consumer Project, Inc.
Judy Braiman, President
December 1, 2015**

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IV. Artificial Turf

Empire State Consumer Project (ESCP) warns of new questions surrounding the safety of artificial turf. Last year, University of Washington assistant soccer coach, Amy Griffin reported to Seattle news KOMO that 13 Washington soccer players on her recruiting list have been diagnosed with rare cancers and 11 of those were goal keepers. **This year, Amy Griffin's list rose to over 158 players with cancer, 101 of them goalies. Although a causal relationship has not been established, this growing trend warrants serious research.**

The theory is that goal keepers spend more time playing closer to the ground, diving into the turf on their hands, knees, and faces and that they may be exposed more than other players to the toxic chemicals in the recycled tire crumb rubber from which the turf is made. In 2007, ESCP (formerly RAMP) conducted a screening analysis of artificial turf samples and found a large number of toxics, including the carcinogen arsenic.

The concentrations of some chemicals found in the analysis were compared to the New York State and New Jersey upper-limits of allowable concentrations in the soil at hazardous waste sites that have been remediated. In some cases, these concentrations reported above exceeded hazardous waste site limits. In addition, approaches to evaluating hazardous waste sites typically require that the mixture of chemicals present be considered, rather than each chemical being individually evaluated. When multiple chemicals have the potential to target the same systems in the body (e.g., the nervous system) or are capable of causing mutations, cancer, or birth defects, it is particularly important that protective strategies be developed that consider the total burden of chemicals at a location or in a product. Many of the chemicals identified in fill share numerous target organs, and some are capable of causing cancer and birth defects. That adds complexity to the evaluation of fill, but is relevant when considering the safety or hazards associated with synthetic turf installations or any other consumer product.

We have known for years that artificial turf contains cancer causing chemicals, but this news again brings to light the need for more research. In addition to containing carcinogens, turf fields pose a number of other health risks ESCP has been reporting on since the fields were first introduced in schools. Some studies show a higher incidence of knee injuries and sprains on turf vs. grass. Injuries including 'turf burn' and 'turf toe' are highlighted by 40 Women's World Cup soccer players, including local player, Abby Wambach, who protested the use of artificial turf for the 2015 World Cup. With skin abrasions, additional research is needed to determine whether methicillin-resistant *Staphylococcus aureus* infections, MRSA are more likely with artificial turf than with grass. Heat on and above artificial turf fields has been measured at up to 200 degrees Fahrenheit, causing heat stroke and dehydration in school children as well as professional athletes.

Schools and towns are eager to have the fields installed because there is a perception that communities are providing a better experience for their children if they can afford turf for their schools and parks – perhaps based on an old notion that these fields are somehow improved over the grass fields many parents grew up with.

Although grass is best, until schools and towns can be convinced of its superiority, there are now turf infill products made of coconut fiber and cork, which are more natural options.

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Update from the EPA...

"The Use of Recycled Tire Materials on Playgrounds & Artificial Turf Fields

Tire Crumb Questions and Answers

Updated on November 9, 2015

Background

Ground rubber - also called "tire crumb" or "crumb rubber" - is produced by reducing rubber from used tires to a smaller size. It is used in road construction, a number of athletic and recreational applications and in the manufacturing of new rubber products (e.g. traffic cones, car bumpers, and garden hoses).

Tire crumbs are often used in synthetic turf fields as "infill" between turf fibers. For example, synthetic turf for athletic fields, golf courses, playgrounds, cruise ships, and airports often contain tire crumbs.

States and local governments - the primary agencies that regulate the management of used tires, including options for recycling, reuse and disposal - have historically viewed tire crumbs as a useful product in many applications, including playing fields. However, the use of tire crumbs on synthetic turf fields has changed over the past decade, leading to new questions about their safety.

Current information from a number of tire crumb studies does not show an elevated health risk from playing on fields with synthetic turf or tire crumbs. However, these studies do not comprehensively address new questions and concerns about children's health risks from exposure to crumb rubber.

EPA Action

EPA supports more comprehensive efforts to identify potential exposures to tire crumbs and better assess risks. As new questions arise, new data and analysis are needed. That's why, in response to recent concerns, a plan to identify gaps in research was developed and work is now underway.

EPA and other federal agencies are working with the California's Office of Environmental Health Assessment to provide their expertise for a comprehensive evaluation of tire crumbs. This evaluation is being designed to provide information needed to make more informed decisions about the safety of crumb rubber.

It involves a series of scientific studies to determine if chemicals in crumb rubber can potentially be released under various environmental conditions and what, if any, exposures or health risks these potential releases may pose to players who frequently play on synthetic fields constructed with tire crumb.

The evaluation includes expert solicitation and stakeholder participation to help guide the study and EPA and other federal agencies are actively engaged in that process. For example, scientists from EPA are providing technical advice on the design of the studies and we will continue to engage with California on implementing the study and interpreting results.

Existing Research and Information

In 2008, EPA conducted a limited Scoping-Level Field Monitoring Study of Synthetic Turf Fields and Playgrounds. The purpose of the limited study was to test a method for measuring possible emissions from using synthetic turf on playgrounds and ball fields, not to determine the potential health risks of recycled tire crumb in playgrounds or in synthetic turf athletic fields.

2008 EPA Limited Scoping-Level Field Monitoring Study of Synthetic Turf Fields and Playgrounds

Other federal, state, and local government agencies have also conducted limited studies. For example, in 2008 and 2009, the Consumer Product Safety Commission and the Agency for Toxic Substances and Disease Registry evaluated synthetic turf in response to concerns about lead exposure. Their evaluations estimated that any potential releases of toxic chemicals, such as lead, would be below levels of concern. From 2009-2011, New York City and the states of New York, Connecticut and New Jersey conducted studies on tire crumb infill and synthetic turf.

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These studies did not show elevated health risk from playing on fields with synthetic turf or tire crumb. However, they do not comprehensively address new questions and concerns about children's health risks from exposure to crumb rubber.

Last updated on November 9, 2015"

<http://espn.go.com/espnw/news-commentary/article/14206717/how-safe-fields-where-play>

<http://www2.epa.gov/chemical-research/use-recycled-tire-materials-playgrounds-artificial-turf-fields>

www.komonews.com/news/local/Soccer-coach-Could-field-turf-be-causing-cancer-259895701.html

www.si.com/planet-futbol/2014/08/05/womens-world-cup-artificial-turf-legal-counsel

www.health.ny.gov/environmental/outdoors/synthetic_turf/crumb-rubber_infilled/fact_sheet.htm

www.albany.edu/ihe/Synthetic_Turf_Chemicals.php/ihe/index.php

CDC's Toxicological Profiles for many chemicals:
<http://www.atsdr.cdc.gov/toxpro2.html>

Toxnet (National Library of Medicine's compilation of many toxicity databases): <http://toxnet.nlm.nih.gov/index.html>

California's list of chemicals known to cause cancer or reproductive damage:
http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html

California's toxicity criteria database:
<http://www.oehha.ca.gov/risk/ChemicalDB/index.asp>

Scorecard Chemical Profile
Search: <http://www.scorecard.org/chemical-profiles/>

Hazardous Substances Data Bank:
<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>

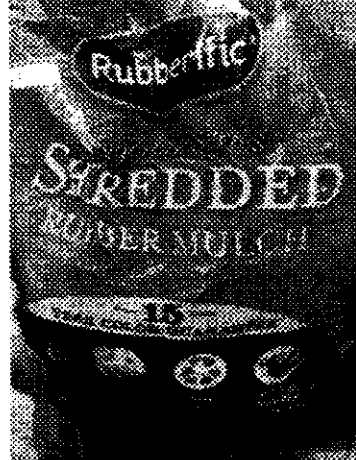
"However, they do not comprehensively address new questions and concerns about children's health risks from exposure to crumb rubber."

V. Artificial Mulch

The attached table lists results obtained on laboratory testing of materials used in rubber mulch. Rubber mulch is made of ground recycled tires like those used for making artificial turf fields. The mulch is advertised as a garden and playground mulch. Some products are marked "Playground safety tested." There are no government standards for testing the safety of rubber mulch for playground use or for garden use. The East Rochester, New York school district is using Nike Grind infill on its artificial turf field.

Among other health effects caused by arsenic and cadmium (both found in samples tested), both are known to be human carcinogens (cancer classification NTP). Zinc, also found in samples, is known to cause respiratory and digestive health effects, and pancreatic and kidney damage. <http://www.atsdr.cdc.gov/substances/index.asp> Inhalation, ingestion, and dermal exposure to toxic chemicals are all concerns where children play. Where foods are grown for human consumption, toxic chemicals potentially leaching into plants is also a concern that warrants study.

We have included only chemicals that show levels higher than current acceptable limits. The 'limits' are NYS DEC soil cleanup guidelines for brownfields. These are minimum requirements and do not imply safety. Limits must be adjusted downward when multiple chemicals are found together. US EPA limits for groundwater and wildlife exposure have not been included. Although some chemicals show values below equipment detection limits, in some cases, detection limits may be higher than DEC limits; these chemicals warrant further analysis.



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