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Related Topics: Safer Chemicals Research

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

Background

Related Links

- [Tire Crumb Questions and Answers](#)
- [Tire Crumb and Synthetic Turf Field Literature and Report List \(November 2015\)](#)
- [2008 EPA Limited Scoping-Level Field Monitoring Study of Synthetic Turf Fields and Playgrounds](#)
- [NY City: Review of the Potential Health and Safety Risks from Synthetic Turf Fields Containing Crumb Rubber Infill](#)
- [NY State: An Assessment of Chemical Leaching, Releases to Air and Temperature at Crumb-Rubber Infilled Synthetic Turf Fields](#)
- [CT Department of Public Health: Environmental and Occupational Health Assessment](#)
- [State of NJ: Crumb Infill and Turf Characterization for Trace Elements and Organic Materials](#)
- [CPSC Staff Analysis and Assessment of Synthetic Turf "Grass Blades"](#)

Tire crumb, a form of “ground or crumb rubber”, is produced by processing used tires to a smaller and uniform size through shredding, grinding and sorting. Tire crumb is used in road construction, manufacturing of new molded rubber products (e.g. traffic cones, car bumpers, and garden hoses) and a number of athletic and recreational applications (e.g. sports fields and play surfaces), including use in synthetic turf athletic fields as "infill" between turf fibers.

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 and/or increased 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 Hazard 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 will continue to engage with California as the study progresses.

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.

Other federal, state, and local government agencies have also conducted limited studies on artificial turf fields. For example, 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. Also, in 2008 and 2009 the Consumer Product Safety Commission and the Agency for Toxic Substances and Disease Registry evaluated synthetic turf "grass blades" in response to concerns about lead exposure. Their evaluations estimated that any potential releases of toxic chemicals from the grass blades, such as lead, would be below levels of concern.

All of 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.

EPA has also developed a *Tire Crumb and Synthetic Turf Field Literature and Report List* (Nov. 2015). It is an extensive, although not exhaustive, survey of the literature from the past 12 years.

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