

# Artificial Turf & Crumb Rubber

## FAQ

### Overview



From playgrounds to child care outdoor play areas, artificial turf fields and crumb rubber infill are now commonly found playing surfaces in the United States. Harmful heavy metals and chemicals are found in both the artificial turf blades and crumb rubber infill. This FAQ will provide you with an overview of artificial turf and crumb rubber infill, and answer questions about: exposure risks, and best practices should children spend time on these surfaces.

### What is artificial turf?



Synthetic or artificial turf is a multi-layer product used as a surface on athletic playing fields, outdoor playgrounds and residential lawns. It typically consists of multiple parts. A top layer of fibers is usually made of nylon, polypropylene, or polyethylene designed to mimic natural grass blades. Next, is an infill that provides cushioning and serves as a base for the blades. Finally, a backing layer, a drainage layer, and additional padding in some applications.

### What is crumb rubber?



Crumb rubber is the end result of shredding and grinding tires until the pieces are the size of a large grain of sand. Crumb rubber is often used as infill for artificial turf fields and playgrounds. It is estimated that 40,000 shredded waste tires are used to create the infill for just one artificial turf field! The U.S. Environmental Protection Agency (EPA) has identified over 350 chemicals in tire crumb (e.g., phthalates & benzene). Many have harmful effects on human health.

### Why should I be concerned?

There are several factors that raise concerns about crumb-rubber infilled synthetic turf fields:



**Heat Stress:** Turf surfaces can become much hotter than natural grass, reaching temperatures as high as 200°F on sunny days, contributing to skin burns and heat-related illness.

**Injury Risks:** Artificial turf has been linked to increased skin abrasions compared to natural grass surfaces.



**Chemical/Heavy Metal Exposure:** Harmful substances like heavy metals (e.g., lead or cadmium), volatile organic compounds (e.g., benzene), phthalates, and per- and poly-fluoroalkyl substances (PFAS), are present in artificial turf's crumb rubber infill, and top layer. Health effects associated with exposure to these heavy metals/chemicals include learning disabilities, cancer and irritation of skin, nose and throat. Exposure pathways include inhalation, skin contact, & ingestion of artificial turf/infill particles & dust.

## What steps can families take to reduce harmful exposures?

**Always wash hands after playing on the field and before eating.**



**Take off shoes/cleats, sports equipment and soiled uniforms outside or in the garage to prevent tracking crumb rubber into the house.**

**Shower after play, and quickly clean any cuts or scrapes to help prevent infection.**



**Be sure to clean equipment or toys immediately after being used on either artificial turf fields or playgrounds containing crumb rubber.**

**Avoid eating while on the field or playground. If consuming beverages on or near the field/playground, make sure to keep drinks closed and put away in a bag, cooler, or other covered container.**



**As a precautionary measure, limit the amount of time a child spends playing on worn or visibly deteriorating surfaces. The older the field is, the more likely that small particles with toxic heavy metals and/or chemicals are suspended into the air (creating artificial turf dust) and then breathed in by children.**



**Clothes worn on these surfaces should be washed separately, and any shoes that have been worn on the field should be left outside or placed in a sealable bag before being brought into the home, school or child care facility.**

## What are safer alternatives?

### Natural Grass Managed Organically

Natural grass fields managed organically eliminates the use of toxic insecticides, herbicides and fungicides. Other benefits of natural grass include: providing a habitat for wildlife; reducing the heat island effect in urban areas; and helping to control flooding.



### Engineered Wood Fiber

A safer alternative for playgrounds surfaces is engineered wood fiber (EWF). EWF is designed specifically for use as playground safety surface material. When choosing EWF make sure it has been tested for the absence of lead, cadmium & chromated copper arsenate (CCA).



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