Crumb Rubber for Artificial Turf: The Effect on Water Systems by Heavy Metal Leaching

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Black Rubber, commonly found in tires and crumb rubber, is known to have carcinogenic materials and compounds such as polycyclic aromatic hydrocarbons and heavy metals. Crumb rubber is recycled rubber and made from used black tires, this rubber still contains all toxic materials found in the typical black rubber from tires. However, crumb rubber is now being used to lay down on turf fields and even as foundations for children's parks. Runoff of water can deposit this turf into local water systems and allow the turf to enter into the local watershed. This experiment was designed to determine if the water source would be contaminated through the exposure to the crumb rubber. Cadmium was 5.8x the legal limit set by the EPA and aluminum was 15x the limit. Mercury and lead were also detected after exposure. Exposure to heavy metals is extremely dangerous because they take the place of important minerals in the body which, in turn, blocks important bodily functions from taking place and can cause toxic buildups. Cadmium can cause a loss of bone density, a weakening of the immune system, pneumonitis, and many other ailments. Mercury and lead poisoning both cause extensive kidney damage while lead can cause a slowing of neurological impulses. Exposure to these heavy metals should be extremely limited.

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