

Toward safer plastics that lock in potentially harmful plasticizers

February 3 2010



Credit: AI-generated image ([disclaimer](#))

Scientists have published the first report on a new way of preventing potentially harmful plasticizers — the source of long-standing human health concerns — from migrating from one of the most widely used groups of plastics. The advance could lead to a new generation of polyvinyl chloride (PVC) plastics that are safer than those now used in

packaging, medical tubing, toys, and other products, they say. Their study is in ACS' *Macromolecules* journal.

Helmut Reinecke and colleagues note that manufacturers add large amounts of plasticizers to PVC to make it flexible and durable. Plasticizers may account for more than one-third of the weight of some PVC products. Phthalates are the mainstay plasticizers. Unfortunately, they migrate to the surface of the plastic over time and escape into the environment.

As a result, PVC plastics become less flexible and durable. In addition, people who come into contact with the plastics face possible [health risks](#). The U. S. [Consumer Product Safety Commission](#) in 2009 banned use of several phthalate plasticizers for use in manufacture of toys and child care articles.

The scientists describe development of a way to make phthalate permanently bond, or chemically attach to, the internal structure of PVC so that it will not migrate. Laboratory tests showed that the method completely suppressed the migration of plasticizer to the surface of the plastic. "This approach may open new ways to the preparation of flexible PVC with permanent plasticizer effect and zero migration," the article notes.

More information: "Phthalate Plasticizers Covalently Bound to PVC: Plasticization with Suppressed Migration", *Macromolecules*.

Provided by American Chemical Society

Citation: Toward safer plastics that lock in potentially harmful plasticizers (2010, February 3) retrieved 26 April 2024 from

<https://phys.org/news/2010-02-safer-plastics-potentially-plasticizers.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.