Behind-the-scenes advances underpin new super-strong plastics

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Long-awaited advances in reducing the cost of certain catalysts — substances that kick-start chemical reactions — have quietly led to production of super-strong forms of the world's most widely used plastics, according to the cover story of the current issue of *Chemical & Engineering News* (C&EN), ACS' weekly newsmagazine. These upgraded forms of polyethylene have led to availability of stronger, more durable consumer products ranging from garbage bags to camping cookware.

C&EN Senior Editor Alexander Tullo notes that the catalysts, called "metallocenes," engendered excitement years ago because they allowed production of stronger forms of polyethylene plastics. The world's most widely used plastic, polyethylene is a mainstay in plastic shopping bags and other items. However, hopes that metallocene plastics would replace conventional polyethylene plastics faded because of the high costs of these catalysts.

The article describes a revival in the use of metallocenes and expanded marketing of super-strong polyethylene plastics. The reason: New technologies have cut the catalysts' cost and fostered production of millions of tons of the new plastics. They are found in products such as stronger garbage bags, improved packaging materials, more durable fuel tanks, and tougher artificial turf for football and soccer fields.

More information: "Metallocenes Rise Again", This story is available at pubs.acs.org/cen/coverstory/88/8842cover.html

Provided by American Chemical Society

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