

Bubble wrap serves as sheet of tiny test tubes in resource-limited regions

July 16 2014

Popping the blisters on the bubble wrap might be the most enjoyable thing about moving. But now, scientists propose a more productive way to reuse the popular packing material—as a sheet of small, test tube-like containers for medical and environmental samples. Their report, which shows that analyses can take place right in the bubbles, appears in the ACS journal *Analytical Chemistry*.

George Whitesides and colleagues explain that although bubble wrap filled with biological samples, like blood or urine, or chemicals would have to be handled carefully, the material offers numerous advantages for those living in resource-limited areas. The material is available almost everywhere around the world, is inexpensive, doesn't generate sharp edges when broken (like glass containers), is easily disposed of by burning and is flexible. The interiors of the bubbles also are sterile, so there's no need for costly autoclaves that have to be plugged in—a huge plus for the nearly 2 billion people around the world who do not have regular access to electricity.

To show that their idea could work, the team injected liquids into the air-filled pockets of bubble wrap with syringes and sealed the holes with nail hardener. They successfully ran anemia and diabetes tests on the liquids. They also could grow microbes such as *E. coli* in the blisters, which is important for detecting contamination in water samples. "The bubbles of bubble wrap, therefore, can be used for storing samples and performing analytical assays, a function that has the potential to be especially beneficial in resource-limited regions, and in very cost-sensitive

applications," they conclude.

Provided by American Chemical Society

Citation: Bubble wrap serves as sheet of tiny test tubes in resource-limited regions (2014, July 16) retrieved 19 April 2024 from <https://phys.org/news/2014-07-sheet-tiny-tubes-resource-limited-regions.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.