

Potato chip flavoring protects concrete

Jordanian scientists have discovered potato chip flavoring can increase the longevity of concrete.

Awni Al-Otoom of the Jordan University of Science and Technology found sodium acetate -- the ingredient that helps give salt and vinegar-flavored potato chips a tangy snap -- is the key to a new waterproof coating for concrete.

Al-Otoom and colleagues note concrete -- the world's most widely used structural material -- is so porous that water soaks in, corroding steel reinforcing bars and meshes that strengthen concrete roads and buildings. That, in turn, causes cracks as water expands and contracts during freeze-thaw cycles.

But the scientists discovered sodium acetate easily seeps into concrete and swells when exposed to water, blocking entry of additional moisture. Under dry conditions, the crystals shrink to their original size and allow moisture to evaporate.

The net result is "a significant reduction in water permeability (that) can be expected to increase the service life of the concrete," the scientists said.

The study is detailed in the Aug. 1 issue of the journal *Industrial & Engineering Chemistry Research*.

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