

# How a Simple Orange Peel Sucks Mercury from Oceans

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By Chuck Bednar

Researchers from [Flinders University](#) have accidentally discovered a technique to remove toxic mercury from water using a material made entirely of industrial waste and orange peel, creating a special polymer that can cheaply and safely suck the metallic substance out of oceans.

According to [Gizmodo](#), synthetic chemists at the South Australian university have dubbed their new polymer sulfur-limonene polysulfide, and as the name suggests, it's made entirely of sulfur and limonene, industrial by-products that are widely available but go largely unused.

Those chemists, Max Worthington and Justin Chalker, explained to [The New Daily](#) that theirs is the first method to remove mercury—a pollutant that can damage food and water supplies as well as cause damage to the human nervous system—directly from H<sub>2</sub>O safely and affordably.

Worthington and Chalker, who report their discoveries in the latest edition of the German journal [Angewandte Chemie International Edition](#), added that the affordable nature of the materials used in the polymer makes it suitable for cleaning up large-scale environmental disasters, to coat pipes transporting domestic and waste water, and even to remove mercury directly from oceans.

## Rubber-like material grabs mercury out of the oceans

Chalker explained to [The New Daily](#) that he and his colleagues initially intended to create a type of plastic or polymer from a readily-available substance, and decided on sulfur because it is mass

produced by the petroleum industry as a by-product. They also decided on limonene because more than 7,000 tons of the relatively inexpensive substance is produced annually.

“We take sulfur, which is a by-product of the petroleum industry, and we take limonene, which is the main component of orange oil, so is produced in large quantities by the citrus industry, and we’re able to react them together to form a type of soft red rubber, and what this material does is that it can grab mercury out of the water,” he told the Australian news publication.

Toxicity studies have verified that the polymer itself is not harmful to the environment, so they are hopeful that they will be able to commercially produce their polymer for use in the real world. The breakthrough has the potential to significantly reduce mercury levels in the ocean, which have reportedly tripled since the start of the Industrial Revolution, according to a [statement](#).

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