



Mercury Removal Sponge (20150326, Dr. Abdennour Abbas)

Selenium Nanomaterials Remove Mercury

A regular, store-bought sponge coated with a nanolayer of selenium can remove over 99.9 percent of mercury from lakes, rivers, storm water ponds, wetlands and wastewater. The selenium nanomaterials are permanently bound to the sponge surface via a unique process. Treating mercury-contaminated water with the sponge binds the mercury into permanent biologically inert, non-toxic complexes, making disposal both easy and safe.

Mercury in Water

Current technologies that remove mercury from water are expensive and do not permanently remove mercury. In addition, they create toxic byproducts that pose health a risk if released into the environment. This technology is inexpensive and more effective at permanent mercury removal. The selenium layer can be easily and quickly grown on the sponge, and the properties of the selenium layer can be modified under different reaction conditions.

BENEFITS AND FEATURES OF MERCURY REMOVAL SPONGE:

- Removes mercury from water to undetectable levels with as little time as a few seconds of treatment
- Improves aquatic life and safety of fish for human consumption
- Simple and inexpensive to manufacture
- Easy disposal of non-toxic byproducts
- Sustainable—permanently captures mercury

Phase of Development Proof of concept

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