Surprising new health and environmental concerns about tungsten

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Surprising new scientific research is raising concerns about the potential health and environmental hazards of tungsten — a metal used in products ranging from bullets to light bulbs to jewelry — that scientists once thought was environmentally-benign, according to an article scheduled for the Jan. 19 issue of Chemical & Engineering News, ACS' weekly newsmagazine.

In the article, C&EN Associate Editor Rachel Petkewich notes that scientists have long held that tungsten is relatively insoluble in water and nontoxic. As a result, the U.S. military developed in the mid 1990s so-called "green bullets" that contain tungsten as a more environmentally-friendly alternative to lead-based ammunition.

But studies now show that tungsten, which is also used in welding, metal cutting, and other applications, is not as chemically inert as previously thought. Some forms of tungsten can move readily though soil and groundwater under certain environmental conditions. Both the U.S. Department of Defense and the Environmental Protection Agency now classify the element as an "emerging contaminant" of concern.

Although scientists think that tungsten seems much less toxic than lead or mercury, they do not know its exact health and environmental effects, the article notes. Scientists have shown that exposure to tungsten can stunt the growth of plants, cause reproductive problems in earthworms, and trigger premature death in certain aquatic animals. But whether or not tungsten can cause chronic health effects in humans, and its

mechanism of action, awaits further study, the article suggests.

Article: "Unease Over Tungsten." This story is available on January 19 at pubs.acs.org/cen/science/87/8703sci2.html

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