

ANNA OSCHMANN, Dept of Chemistry, Fairmont State University, Fairmont, WV, 26554, and MATTHEW SCANLON, Dept of Chemistry, Fairmont State University, Fairmont, WV, 26554. Quantifying lead, copper, iron and arsenic in hair dye samples.

Heavy metals are very hazardous to human health. In the USA, the Food and Drug Administration (FDA) regulates cosmetics so that they are safe for consumer use. However, internet shopping has made it easier for non-FDA approved cosmetics to come into the United States. People have reported serious health problems after using counterfeit cosmetics purchased online. This project focuses on analyzing commercial hair dyes for the presence of As, Cu, Fe, and Pb. Dyes were purchased locally and online, digested in aqua regia and tested with a Shimadzu AA-7000 flame atomic absorption instrument. The concentrations of Cu, Fe and Pb were below the instrument detection limits of 0.02, 0.06, 0.4 ppm respectively, and the amount of As in one sample was inconclusive due to quality control failure. Overall, no significant amounts of metals were detected in the samples. This work was made possible by NASA West Virginia Space Grant Consortium Grant #80NSSC20M0055, and Fairmont State University Chemistry Program.