

Peruvian diatomites are materials with potential use in the decontamination of heavy metals from industrial effluents even with their low SiO₂ content thanks to their minor oxides and specific surface area values. Different parameters must be taken into account at the same time to understand the efficiency of metal removal in polluted waters. The affinity of diatomite for the metals studied followed the trend ZnPbCu with significantly high removal percentages such as 79.0 and 98.35 for Zn, 53.4 and 94.47 for Pb, and 35.4 and 90.3 for Cu. No one-to-one relationships were found between the removal efficiency of the studied metals with physical, chemical, and mineralogical properties such as cation exchange capacity, specific surface area, SiO₂ content, or content of amorphous material. This allows impurities in diatomite to play a fundamental role in their ability to remove metals such as Cu, Pb, and Zn in contaminated effluents. For example, the presence of Al and Fe decreases the efficiency of the diatomite to remove these heavy metals.