



PHYSICO-CHEMISTRY OF CONTINENTAL BENTONITES AND KAOLIN FOR CERAMIC APPLICATIONS

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ABSTRACT:- Growing demand for bentonite and kaolin applications in the ceramic industry motivated this study which aimed at physico-chemically characterizing some selected continental clayey materials from Botswana, Mozambique, Pakistan, Senegal, South Africa and the United States of America. The hydrogen ion concentration (pH), electrical conductivity (EC), cation exchange capacitance (CEC), specific surface area (SSA) and color were determined. The results depicted that the pH values were between 5.8 and 10.5, EC values ranged from 200 $\mu\text{S}/\text{cm}$ to 6501 $\mu\text{S}/\text{cm}$, CEC values occurred between 3.5 meq/100 g and 105 meq/100 g, and the SSA values were between 4 m^2/g and 19 m^2/g . Raw clay color ranged from white to black with most samples having a greyish-like appearance. These values are in conformity with those obtained by other researchers, and based on their physico-chemical characteristics, the clayey materials were found to be suitable for use in the ceramic industry.