

# Study of physico-chemical properties of diatomite Algeria: Application to the thermal insulation of liquid steel bath

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**Abstract:** The purpose of this paper is to characterize and to evaluate the diatomite powder of Sig region (West Algeria) without fluorine by powder generally used in tundish to thermal insulation of steel bath contain fluorine, that affecting the environment and health of workers. Thermal and physicochemical characterization showed different endothermic and exothermic peaks. The scanning microscopy method was used and a large porosity was observed, which is very beneficial for improving the thermal conductivity of the product. The trial industrial in steelwork with diatomite powder, showed a weak loss temperature of steel ( $10^{\circ}\text{C}_{\text{max}}$ ), and filled fully function in thermal insulation of the steel bath

**Keywords :** diatomite, fluorine, Tundish, steelwork, thermal insulation, DSC