

## Physicochemical properties of immobilized solid amine sorbents and their chemical CO<sub>2</sub> capture capacities

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We now present a new investigation method based on physical properties for the removal of CO<sub>2</sub> in five different immobilized solid amines, which are composed of the chemical absorbent/support for the immobilized solid sorbents in the ratio 0.8:1.0. We are unaware of any previously published data on these impregnated solid amine sorbents with which to compare our results. The physicochemical properties of CO<sub>2</sub> capture sorbents are necessary for the design, operation, and optimization of acid gas treatment equipment and therefore, we measured density, surface area and thermo-gravimetric analysis over a wide range of temperatures. Also, we have studied the estimation of impregnated five solid amine sorbents through CO<sub>2</sub> loading capacity, reaction rate and CO<sub>2</sub> outlet breakthrough curves with increasing amount of additive as well as by the characterization of adsorption of blended solid amine sorbents.