

## **Characterisation of Brazilian Carbonate Rocks According to Porosity and Termogravimetric Analysis**

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This study examines the performance of granular limestone and dolomitic limestone sorbents. The use of sorbents for the removal of harmful species during combustion and incineration is becoming increasingly important. Sorption process, by which a sorbate is removed from a gas stream by a preferential sorbent, traditionally uses granular sorbent particles. TGA and Porosimetry are the techniques usually employed for the characterization of sorbents.

Considerable work has already been done on the kinetic of the sulfation reaction and on the reactivity on carbonate rocks. It is believed that the results of such work now provide some broader principles on the selection of natural carbonate rocks for sorbing sulfur dioxide. Nevertheless, kinetic studies indicated wide variation in high-temperature  $\text{SO}_2$  reactivity of different geological types of carbonate rocks. Some authors recommend that to be well suited for the sorption of sulfur dioxide, a carbonate material should have an initial porosity prior to calcination of more than 30% to permit it to accommodate all calcium sulfate formed by the reaction. Furthermore, according to the technical literature a geologic age is a very important factor. Therefore, in this work we have studied five carbonate rocks of different geological ages aiming to establish criteria for its use with the gas dessulfurization technology (FGD). This work also takes into consideration the geological context of the rocks being studied.