

INFLUENCE OF MINERAL COMPOSITION AND THERMAL OR MECHANICAL
ACTIVATION ON THE REACTIVITY OF KAOLINES AND THEIR
HYDROTHERMALLY TREATED PRODUCTS

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Thermally and mechanically activated quartz-free kaoline and kaoline types with quartz contents from 5 - 20 % were investigated by DTA, TG, DTG, SEM, and X-ray diffraction. Conversion to metakaoline took place by short time annealing at temperatures higher than 300 K above the endothermic transition point of the DTA diagram or long time heating in the neighbourhood of the transition temperature.

Distorted structures were also generated by grinding and producing a kaoline xerogel.

The reactivity of these samples was measured by γ - Al_2O_3 and SiO_2 crystallization at the exothermic point of the DTA curve (decomposition of metakaolinite).

The formation of crystalline aluminosilicates after hydrothermal treatment was characterized by adsorption and thermodesorption of water.

Lattice stability during steam treatment and breakdown temperature were estimated by DTA. The influence of dealumination and ion exchange on the lattice stability was elucidated, too.

Full text of this contribution was not submitted.