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A comprehensive study of imported alumina "Salox ALO DN-23" was carried out using the methods of infrared spectroscopy, X-ray fluorescence analysis and electron microscopy, which made it possible to obtain a number of important results. It is shown that the studied alumina is represented in a significant amount by β -alumina, and the presence of calcium-containing impurities in it activates a low-temperature reaction sintering of the composite material with the manifestation of an antishrinkage effect, a decrease in open porosity and pore size. Such features contribute to an increase in strength, reduce gas permeability and prevent carbon oxidation, increasing the efficiency of pyrolysis. Experimental verification of the prototypes of corundum-carbon composite using the studied alumina "Salox ALO DN-23" confirmed the predicted effects.

Keywords alumina, corundum-carbon composites, X-ray fluorescence analysis, electron microscopy