
Mössbauer Effect Studies of Iron in Kaolin. II. Surface Iron

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Abstract: ⁵⁷Fe Mössbauer spectra have been used to interpret the effects of different cleaning processes on the iron mineralogy of a Weipa, Australia, kaolin. A magnetically separated fraction contained 28% of its iron as hematite likely of secondary origin. An initial centrifugal size separation was shown to give an improved final product, and oxalic acid was found to be more efficient at removing Fe from the kaolinite surface than dithionite bleach. The Mössbauer spectra clearly show that beneficiation steps which give a substantial increase in kaolin brightness result in only minor changes in the clay iron mineralogy. Similar results were also obtained for two commercially available kaolins.

Key Words: Beneficiation • Iron • Kaolin • Mössbauer effect • Surface

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