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TITLE: Trinidad Porcellanite: A Possible Source of Mullite

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In the as-mined state, Trinidad porcellanite is comprised mainly of the minerals leucite [K(AlSi2O6)], kalsilite [K(AlSiO4)], silica and to a lesser extent hematite (Fe2O3). However, on firing to sufficiently high temperatures the leucite dissociates into silica and alumina which combine at higher temperatures to form mullite (3Al2O3.2SiO2), an important and widely used industrial refractory. During the process however, additional kalsilite which is undesirable in refractories for high-temperature applications is formed. This project explores the possibility of producing kalsilite-free mullite from the porcellanite. Additionally, the results showed that caustic soda is a possible leaching agent.