

Dewatering Agents for Granular Bauxite

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Abstract : Operations have been demanding increasingly challenging operational targets for the dewatering process, requiring lower humidity for concentrates. Chemical dewatering agents are able to improve solid/liquid separation processes, allowing operations to deal with increased complexity caused by either mineralogical changes or seasonal events that present operations with challenging moisture requirements for transportation and downstream steps. These chemicals reduce water retention by reducing the capillary pressure of the mineral and contributing to improved water drainage. This current study addresses the reagent effects on pile dewatering for Bauxite. Such chemicals were able to decrease the moisture of granulated Bauxite (particle size of 5 - 50 mm). The results of the laboratory scale tests and industrial trials presented the obtention of up to 11% relative moisture reduction, which reinforced the strong interaction between dewatering agents and the particle surface of granulated Bauxite. The evaluated dewatering agents, however, did not present any negative impact on these operations.

Keywords : bauxite, dewatering agents, pile dewatering, moisture reduction

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