

INTRODUCTION OF ACORGA® CR60LT IN THE DEMOCRATIC REPUBLIC OF THE CONGO: A NEW ADDITIVE TO MITIGATE CRUD FORMATION IN SX OPERATIONS

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ABSTRACT

Agitated leaching allows for dissolution of most acid-soluble copper minerals in hours compared to months or years in traditional heap leach operations. Due to the high ore grades in the African Copper Belt and variable acid consumption, agitated leaching is a common practice and is used more widely in Africa than in other regions.

Two common challenges for agitated leach solvent extraction (SX) circuits are higher presence of colloidal silica (Si) in the pregnant leach solution (PLS) and elevated levels of total suspended solids (TSS). Both can negatively affect the physical and metallurgical SX performance and lead to higher processing costs or reduced copper production. Colloidal Si can prolong phase disengagement times, resulting in elevated aqueous entrainment, impurity transfer and, in some cases, cause stable emulsions requiring plant downtime. Elevated levels of TSS can lead to increased crud levels and mixer phase instability, resulting in higher entrainment.

Operating in organic continuity is preferred to address Si or TSS challenges, but is not always possible. Additional treatment options may be advantageous. For this reason, Solvay recently introduced ACORGA® CR60LT, a new chemical additive for PLS treatment to address these concerns. Continuous addition to the PLS improved physical performance without negatively affecting Cu transfer or cathode quality. This paper will review results and benefits from commercial utilization at the La Miniere De Kasombo (MIKAS) SX-EW plant in the DRC.

Keywords: Solvent extraction (SX); Crud; Entrainment; Additive.