

# Chloride Control in SX-EW Electrolytes from Chloride Leach Operations

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## ABSTRACT

Conventional SX plants need to be adapted to behavior of the new PLS rich in chloride. The electrolyte contamination is here avoided by using two or three washing steps depending on the level of chloride used in the leach stage. Also new decanter (DOC) to reduce entrainment in the loaded organic are employed, hydraulic picket fence arrangement and modified stirring devices are also available technology. Unfortunately, robust tools to analyze and decide the real value of the market options are generally missing.

A novel methodology to face the above-described situations is presented. It first includes an experimental procedure to characterize the plant from the hydraulic point of view of a two-immiscible phase system. Secondly, a robust methodology to scale up the collected data to catch the dynamic response of entrainment at the plant and finally, a simulator to provide options to control different practical situations occurring at the plant are discussed.

The linear velocity of the organic is computed as the flowrate divided by the cross area, this is often a biased relationship because entrainment depends on the actual 3D velocity profile and it in turn, depends on design and operational conditions as well as on the unknown accumulation of crud into the settler. This situation is clearly handled with assistance of the new methodology.

It is shown that drop size distribution is an essential requirement to the mixing system and a method to verify it is provided.

Several paradigms in the SX practice are discussed and a study case is presented which shows the application of the proposed methodology to handle and control the aqueous in organic entrainment and the chloride transfer to the electrolyte.

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