

## Iron Precipitation From Zinc-Rich Solutions: Optimising The Zincor Process

The inherent weakness of the Zincor and similar iron removal processes is the relatively high undissolved zinc loss associated with the iron residue. High soluble zinc losses also occur due to poor filterability of the iron residue even though it may be limited to intermittent events. This work focussed on defining the optimum operating window for the Zincor iron removal process where iron is mainly removed in the form of amorphous, intermediate iron phases such as schwertmannite and ferrihydrite. In terms of the main operating conditions, optimum filterability was achieved under the following conditions: pH of 3.0, temperature as high as practically possible (70°C), at least 25 kg/m<sup>3</sup> seeding, and a retention time of at least 4 hours. When increasing the temperature from 60°C to 70°C, the required residence time decreased by almost 50%. Undissolved zinc loss was also reduced from 8% to between 2% and 3% by using a basic zinc sulphate/zinc oxide mixture as neutralising agent to effect iron removal.