Electrical conductivity as a novel technique for control of lime softening process

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ABSTRACT

Lime softening is a well-established process for partially separating of hardness ions from water. Currently, the lime softening process is adjusted manually based on chemical titration tests aimed at maintaining the simple and total alkalinities in a certain range. Analysis of experimental data from bench and full-scale lime clarifier showed that the current control based on alkalinity is often not correct. It was found in this work that electrical conductivity (EC) can be used as a good indicator for evaluating the performance of lime clarifiers. Therefore, an eco-friendly and very cost effective alternative technique based on EC is introduced in this paper for successful control of lime softening process.

Keywords: Hardness; Lime clarifier; Control; Alkalinity; Electrical conductivity

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