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FTIR ANALYSIS OF ION EXCHANGE RESINS WITH APPLICATION IN PERMANENT HARD WATER SOFTENING

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Abstract

The purpose of the present study is the comparative investigation of the calcium cations removal from aqueous solutions using two strong acid cationic resins recommended during the last years for water softening. The performances of the two resins were evaluated by the means of the cationic exchange capacity and the retention degree of the calcium cations. The evaluation of the two resins behaviour in the ion exchange process was performed by the means of the FTIR spectra recorded on the resins before and after being used in the calcium cations exchange process. By reporting to the *Purolite C100E* resin regarded as benchmark, one can state that the *Pure Resin PC002* can be considered as a viable alternative for the water softening processes, but a prior economical analysis should be performed regarding the costs reported to the usefulness and benefits.

Key words: food grade water softening, FTIR spectra, ion exchange, Purolite C100E, Pure Resin PC002, strong acid cation resin

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