

## TAP WATER PURIFICATION USING PITCHER FILTERS

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### Abstract

Due to the high risk of exposure to various contaminants in drinking water, pitcher filtration is rapidly growing in popularity worldwide as a cheap and easy method to remove pollutants from drinking water. On the other hand, an evaluation of the real-time performance of pitchers is not possible for usual consumers. This study presents the performance of pitcher filtration in the removal of copper, chlorine, and chloroform from tap drinking water. Pitchers were packed with Aquaphor cartridges JS500, A5, and B25. Experiments were performed with model solutions, which were prepared from hard drinking water (7.5 mval/L, pH=7) spiked with copper, hypochlorite sodium, and chloroform. It was found that pitcher filtration is a very effective method for the removal of pollutants such as heavy metals, chlorine, and disinfectants by-products. The concentration of copper, chlorine, and chloroform in filtrates did not exceed the maximum admissible values. Cartridges JS500, A5, and B25 reduced chlorine at a comparable level – almost 100%. During the whole experimental period, removal of chloroform was slightly better for JS500 (100%) and A5 (100%) cartridges than for B25 (91.4–97.7%).

**Keywords:** Chlorine; chloroform; Drinking water; Heavy metals; Pitcher filtration.