

Phenol removal multi cell small water treatment device

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ABSTRACT

A conical one body multi cell, multistage water treatment filtration devices are designed to realize a couple of different processes. Their properties can be used for different technological processes (filtration, ion-exchange, active carbon sorption, etc.). As an example, the devices are studied experimentally for effective technological removal of organic contaminants (phenols) from water using polymeric adsorbents, strong-base anion exchange and active carbon sorption materials. These attempts to combine three processes in one filtration body did show successful results, while the small water treatment devices still being affordably priced. The main contribution of these devices is that they have very compact simple design, simple operative procedures, reduced quantity of valves for treated water and reagent flow regulation. The conical shape of the conical one body multi cell multistage water treatment filtration device ensures linear flow rate to slow down on its path. This hydraulic phenomenon plays a positive role during the sorption processes. The devices could be used as a small water treatment module for local drinking water treatment, etc.

Keywords: Phenol removal; Small water treatment device; Multistage filter; Multi cell filter

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