



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: MODULAR APPARATUS FOR THE DEMINERALIZATION OF LIQUIDS

## (57) Abstract

A modular system for the demineralization of aqueous liquids comprising a plurality of modular units for the demineralization of liquids, each of the modular units being encapsulated and having a cathode proximate a first end of the modular unit and an anode proximate the opposite end of said modular, and having a plurality of alternating diluting compartments and concentrating compartments positioned between the cathode and the anode, the diluting and concentrating compartments defined by anion and cation permeable membranes, ion exchange material positioned within the diluting compartments, the system having conduit means for passing a first liquid to be purified through the diluting compartments and conduit means for passing a second liquid through the concentrating compartments for accepting ions from the first liquid, means for passing an electrolyte to the cathode and anode and means for recovering the purified liquid from the diluting compartments. Quick release securement means are provided to interconnect the modular units in the system to allow for facile substitution of modular units for servicing and to permit modification of flow capacity requirements by increasing or decreasing the total number of modular units in the system.

