

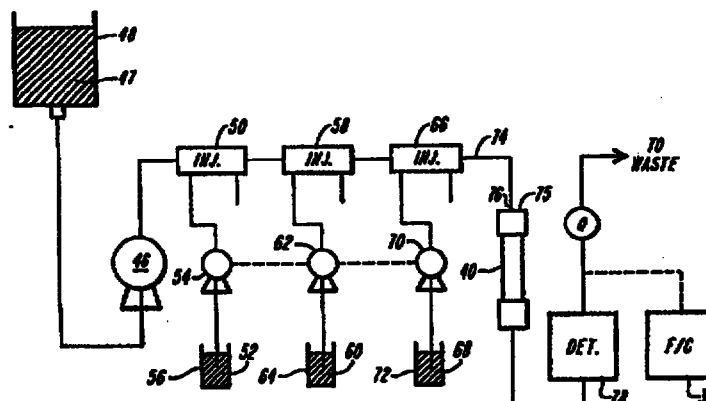
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(54) Title: HIGH PERFORMANCE LIQUID CHROMATOGRAPHY METHOD AND APPARATUS



(57) Abstract

High pressure liquid chromatographic apparatus in which a fluid mixture containing at least one solute that is reactive with chromatographically reactive surfaces in the column is loaded into the column, and a number of plugs of different eluant fluids are injected into that column. The injections are made in a manner that minimizes the amount of eluant required. In one embodiment, the injections are made to insure that flow of at least the eluant fluids through the column will occur, preferably with a substantially flat wave front, at speeds corresponding to reduced velocities greater than about 5,000, i.e. at flow rates sufficient to induce turbulent flow in those fluids, thereby minimizing the time required for the entire succession of mixture and eluant fluids to traverse the column. In other embodiments, the injections are made substantially simultaneously at spatially separated points adjacent the entrance to the column or are made in sequence to a single location adjacent the entrance to the column, in either case the fluids then tend to travel through the column at a common group velocity as closely bunched fluid plugs.