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(54) Title: AUTOMATED LIQUID HANDLING AND TESTING SYSTEMS AND METHODS

(57) Abstract: A mixing system that employs a pump with a highly sensitive means of adding and controlling volumes of single or multiple reagents to a controllable volume of a sample, mixing said samples and reagents, providing the means of employing a specific measurement tool on some portion of the mixed sample, and finally reporting the results to a final control element automatically under industrial conditions and often essentially *in situ* to fluid flows such as fluid moving through, a pipeline or industrial process.



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