

Abstract

APPARATUS AND METHOD FOR PREPARING
A DEVELOPER SOLUTION

Apparatus for preparing a developer comprises a mixing bath equipped with means for receiving and mixing an undiluted developer solution and pure water, an ultrasonic densitometer for measuring the developer components contained in the developer in the mixing bath, flow rate controlling means for controlling the supply rate of the undiluted solution and/or pure water into the mixing bath according to the output signal from the ultrasonic densitometer, and a storage tank for receiving and storing the developer containing the developer components at a desired concentration.

The apparatus is used by supplying and mixing an undiluted developer solution and pure water into the mixing bath, measuring the concentration of the developer components in the developer in the mixing bath by the densitometer, controlling the supply rate of the undiluted developer solution and/or pure water into the mixing bath by inputting the output signal from the densitometer into the flow rate controlling means, to provide developer containing the developer components at a definite concentration in the mixing bath, and supplying the developer to the storage tank and storing it therein.

The preferred developer is aqueous tetramethylammonium hydroxide, prepared from an undiluted solution of 5-40 wt% concentration which is diluted to about 2.4%; this is used for lithography.