A PROCESS WITHOUT POST-ETCH CLEANING – CONVERTING POLYMER AND BY-PRODUCTS INTO AN INERT LAYER

ABSTRACT

A new method to avoid post-etch cleaning in a metallization process is described. An insulating layer is formed over a first metal line in a dielectric layer overlying a semiconductor substrate. A via opening is etched through the insulating layer to the first metal line whereby a polymer forms on sidewalls of the via opening. The polymer is treated with a fluorinating agent whereby the polymer is converted to an inert layer. Thereafter, a second metal line is formed within the via opening wherein the inert layer acts as a barrier layer to complete the metallization process in the fabrication of an integrated circuit device.

(Figure 2)