ABSTRACT

A method for restoring hydrophobicity to the surfaces of organosilicate glass dielectric films which have been subjected to an etchant or ashing treatment. These films are used as insulating materials in the manufacture of integrated circuits to ensure low and stable dielectric properties in these films. The method deters the formation of stress-induced voids in these films. An organosilicate glass dielectric film is patterned to form vias and trenches by subjecting it to an etchant or ashing reagent in such a way as to remove at least a portion of previously existing carbon containing moieties and reduce hydrophobicity of said organosilicate glass dielectric film. The vias and trenches are thereafter filled with a metal and subjected to an annealing treatment. After the film is subjected to the etchant or ashing reagent, but before being subjected to an annealing treatment, the film is contacted with a toughening agent composition to restore some of the carbon containing moieties and increase the hydrophobicity of the organosilicate glass dielectric film.