

CLAIMS

1. Cleaning chemical composition suitable for removing, from a substrate (1A, 1B, 4), a passivation layer (2) comprising etching residues resulting from etching of said substrate (1A, 1B, 4), the passivation layer comprising one or more of the chemical elements selected from tantalum, hafnium and zirconium, characterised in that it comprises:
 - a weak acid chosen from acetic acid and a mixture of acetic acid and formic acid, the weak acid content being between 20% by weight and 80% by weight, relative to the weight of the chemical composition,
 - a non-oxidising strong acid chosen from methanesulphonic acid, having a concentration of between 60% by weight and 80% by weight, and a mixture of methanesulfonic acid having a concentration between 60% by weight and 80% by weight and hydrochloric acid having a concentration between 30% by weight and 40% by weight, the strong non-oxidising acid content being between 5% by weight and 50% by weight, preferably between 15% by weight and 50% by weight, relative to the weight of the chemical composition,
 - hydrofluoric acid, whose content is between 0.2% by weight and 2% by weight relative to the weight of the chemical composition,
 - water, whose content is between 2% by weight and 20% by weight relative to the weight of the chemical composition.
2. Cleaning method for removing, from a substrate (1A, 1B, 4), a passivation layer (2) comprising etching residues resulting from etching of said substrate (1A, 1B, 4), the passivation layer comprising one or more of the chemical elements selected from tantalum, hafnium and zirconium, the method characterised in that it comprises the following steps:
 - providing a cleaning chemical composition according to claim 1,
 - bringing the cleaning chemical composition into contact with the passivation layer (2) for a time that is sufficient to remove said passivation layer (2) from the substrate (1A, 1B, 4).
3. Method according to claims 2, comprising, prior to the contact step, a step for plasma etching of a layer or of a stack of layers of a substrate (1A, 1B, 4) from which the

passivation layer (2) results by the interaction of plasma ions with the layer or at least one of the layers of the stack of layers of the substrate (1A, 1B, 4).

4. Method according to one of claims 2 to 3, wherein during the period it is in contact with the passivation layer (2), the chemical composition is at a temperature of between 20°C and 40°C, preferably between 20°C and 30°C.
5. Method according to claim 3 wherein the constituent materials of the etched layer or of the stack of etched layers of the substrate (1A,1B, 4) are chosen from one or more of the following materials: metals, metallic oxides, semiconductor materials, oxides of semiconductor materials.
6. Method according to claim 3 wherein the constituent materials of the etched layer or of the stack of etched layers of the substrate (1A, 1B, 4) comprise aluminium and/or copper.