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(54) **Title:** TANTALUM BASED ALLOY THAT IS RESISTANT TO AQUEOUS CORROSION

(57) **Abstract:** A tantalum or tantalum alloy which contains pure or substantially pure tantalum and at least one metal element selected from the group consisting of Ru, Rh, Pd, Os, Ir, Pt, Mo, W and Re to form a tantalum alloy that is resistant to aqueous corrosion. The invention also relates to the process of preparing the tantalum alloy.