

CLAIMS

1. Electrode element comprising:
 - a valve metal substrate;
 - 5 - a first catalyst component applied to said substrate, said first catalyst component suitable for evolving oxygen from an aqueous solution under anodic polarisation;
 - a second catalyst component suitable for generating chlorine dioxide from a chlorate solution in acidic environment;
 - 10 said first and second catalyst component being electrically insulated from each other.
2. Electrode element according to claim 1, wherein said second catalyst component is supported on a ceramic support.
- 15 3. Electrode element according to claim 1, wherein said second catalyst component is supported on a metallic support.
4. Electrode element according to claim 3, wherein said second catalyst component is connected to a power supply.
- 20 5. Electrode element according to claim 1, wherein said first catalyst component comprises noble metal oxides.
- 25 6. Electrode element according to claim 1, wherein said second catalyst component is a mixture of noble metal oxides selected from the group consisting of ruthenium oxide, iridium oxide, palladium oxide, rhodium oxide and platinum oxide, optionally comprising a valve metal oxide.
- 30 7. Electrode element according to claim 1, wherein said second catalyst component is in the form of a sheet, a mesh or a porous material.
8. Electrolytic cell comprising at least one electrode element as described in claim 1.

9. Electrolytic cell according to claim 8, wherein the electrode elements are disposed by array of intercalated first catalyst components applied to substrates and second catalyst components insulated from each other.
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10. Process for the generation of chlorine dioxide on a catalyst component comprising the steps of:
- providing an electrochemical cell comprising at least one cathode and at least one electrode element as described in claim 1 as anode;
 - 10 - filling said cell with an aqueous feedstock containing a chlorate solution;
 - electrolyzing said feedstock by passing an electric current between the cathode and the anode thereby forming oxygen and acidity on the surface of said first catalyst component and thereby acidity in close contact with the surface of said second catalyst layer;
 - 15 - stripping and recovering the chlorine dioxide generated on the catalytic layer.
