

Title (en)
Electrode for producing chlorine through electrolysis

Title (de)
Elektrode für die elektrolytische Chlorherstellung

Title (fr)
Electrode pour la production électrolytique de chlore

Publication
EP 2447395 A2 20120502 (DE)

Application
EP 11186428 A 20111025

Priority
DE 102010043085 A 20101028

Abstract (en)
Electrode comprises at least an electrically conductive substrate and a catalytically active coating. The catalytically active layer is based on two catalytically active components comprising at least iridium, ruthenium or titanium as a metal oxide and/or mixed oxide. The total amount of ruthenium and/or iridium based on the sum of iridium, ruthenium and titanium is at least 10 mole-%, preferably 10-20 mol% and up to half of the ruthenium and/or iridium is replaced by vanadium or zirconium. At least one oxide base layer is applied on the electrically conducting substrate. Electrode comprises at least an electrically conductive substrate and a catalytically active coating. The catalytically active layer is based on two catalytically active components comprising at least iridium, ruthenium or titanium as a metal oxide and/or mixed oxide. The total amount of ruthenium and/or iridium based on the sum of iridium, ruthenium and titanium is at least 10 mole-%, preferably 10-20 mol% and up to half of the ruthenium and/or iridium is replaced by vanadium or zirconium, preferably vanadium. At least one oxide base layer is applied on the electrically conducting substrate and the oxide base layer is impermeable for aqueous electrolytes comprising sodium chloride and/or sodium hydroxide or hydrogen chloride. Independent claims are also included for: (1) producing the electrode, comprising applying sol-gel coating solution containing a solution or dispersion of metal compounds of at least one of ruthenium, iridium or titanium on the electrically conductive substrate, preferably by immersion, removing the solvent, and calcining the dried metal compound layer at elevated temperature, preferably at least 350[deg] C, preferably at least 400[deg] C in the presence of oxygen-containing gases and optionally the steps of applying the solution or dispersion, drying and calcinating is carried out once or repeated many times; and (2) an electrolyzer for electrolyzing the electrolysis of sodium chloride or hydrogen chloride-containing solutions, comprising the electrode as an anode.

Abstract (de)
Es wird eine Elektrode mindestens bestehend aus einem elektrisch leitenden Substrat und einer katalytisch aktiven Beschichtung beschrieben, bei der die katalytische aktive Schicht auf zwei katalytisch aktiven Komponenten basiert, die mindestens Iridium, Ruthenium oder Titan als Metalloxid oder Mischoxid oder Mischungen der genannten Oxide enthält, wobei der Gesamtgehalt an Ruthenium bezogen auf die Summe der Elemente Iridium, Ruthenium und Titan, 10 bis 28 Mol-% beträgt, und dass mindestens eine Basisschicht vorgesehen ist, die auf dem elektrisch leitenden Träger aufgebracht ist und die für wässrige Elektrolyte undurchlässig ist.

IPC 8 full level
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