

Title (en)
PROCESS FOR THE PREPARATION OF MASTER ALLOYS OF IRON AND NEODYMIUM BY ELECTROLYSIS OF OXYGEN-CONTAINING
SALTS IN MOLTEN FLUORIDES

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EP 0289434 B1 19911218 (FR)

Application
EP 88420124 A 19880419

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FR 8705954 A 19870421

Abstract (en)
[origin: US4828658A] The invention concerns a process for the electrolytic preparation of a mother alloy of iron and neodymium by the reduction of a mixture comprising at least one reactive oxygen-bearing compound of neodymium in a bath of molten halides with at least one metallic cathode, preferably of iron, and a carbon anode. In accordance with the invention, the bath is primarily formed by a mixture of molten fluorides whose decomposition potential is close to that of NdF₃ or more negative, such as for example NdF₃, MgF₂, ScF₃, CeF₃, LaF₃, BaF₂, CaF₂ and SrF₂, and permitting solubilization of the oxides by a complexing effect, the solute to be reduced is formed by a mixture of salts primarily containing a reactive oxygen-bearing compound of neodymium which is very rapidly soluble in the molten electrolyte. The working temperature is in a range of from 640 DEG to 1030 DEG C., the anodic current density is from 0.1 to 1.5 A/cm², and the cathodic current density is between 2 and 30 A/cm².

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