

Title (en)

METHOD AND APPARATUS FOR PRODUCING METAL

Title (de)

VERFAHREN UND VORRICHTUNG ZUR PRODUKTION VON METALL

Title (fr)

PROCEDE ET APPAREIL DE PRODUCTION DE METAL

Publication

EP 1666615 A1 20060607 (EN)

Application

EP 04747490 A 20040714

Priority

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Abstract (en)

The present invention relates to a method for producing a metal by a direct oxide reduction process with Ca. A CaCl₂-based molten salt containing Ca is held in a reduction chamber 1, a metal oxide is introduced into the molten salt in the reduction chamber 1, and the metal oxide is reduced with the Ca in the molten salt to form said metal. The metal formed in the molten salt is separated from the molten salt in a separation means 2, and the molten salt deprived of the metal is introduced into a chlorination chamber 7 and subjected to chlorination treatment with chlorine gas to eliminate the byproduct CaO in the molten salt. The molten salt after chlorination treatment is introduced into an electrolysis chamber 8 and electrolyzed for the formation of Ca and chlorine from CaCl₂, and the thus-formed Ca or Ca-containing molten salt is transferred from the electrolysis chamber 8 to the reduction chamber 1. The chlorine obtained in the electrolysis chamber 8 is used in the chlorination chamber 7. Thus, the present invention provides a metal production method and an apparatus wherein high levels of productivity are obtained and the product metal can be inhibited from carbon contamination due to CaO, without any generation of CO₂ from the production process, while their being based on the direct oxide reduction process comprising the step of reducing a metal oxide with Ca.

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