

Title (en)

A SMELTING PROCESS OF FERRONICKEL WITH NICKEL OXIDE ORE CONTAINING OF CRYSTAL WATER IN A BLAST FURNACE

Title (de)

VERHÜTTUNGSVERFAHREN FÜR FERRONICKEL MIT KRISTALLWASSER ENTHALTENDEM NICKELOXIDERZ IN EINEM HOCHOFEN

Title (fr)

PROCÉDÉ DE FABRICATION DE FERRONICKEL PAR FUSION DE MINÉRAI D'OXYDE DE NICKEL CONTENANT DES CRISTAUX D'EAU DANS UN HAUT-FOURNEAU

Publication

EP 1927666 A4 20081203 (EN)

Application

EP 05801995 A 20051102

Priority

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Abstract (en)

[origin: EP1927666A1] The present invention provides a metallurgical method of ferronickel by blast-furnace smelting nickel oxide ore containing crystal water which mainly comprises the step of crushing and sieving the raw ore, manufacturing the ore powder into sintered ore and blast-furnace smelting the mixture of sintered ore blocks, coke, limestone/calcium lime, dolomite as well as fluorite to obtain the ferronickel, wherein the weight ratio of the additives to sintered ore is: 0.3~20% fluorite, 0~8% dolomite, 4~35% limestone/calcium lime. The method further comprises crushing and sieving sintered ore blocks, magnetic sorting to obtain refined ore powder and then sintering again. Compared with the prior art, the proportion of fluorite and sintered ore in the metallurgical technology of ferronickel provided by the present invention can lower the effect of chrome on the furnace temperature, meanwhile can also avoid occurring of accidents, such as burnout of crucible caused by too high content of Fluorine; Magnesium contained in dolomite may solve the problem on bad fluidity of iron water caused by chrome in nickel and chrome ores; limestone can not only provide alkalinity but balance both of the above mentioned additives. The metallurgical method of blast furnace smelting provided by the present invention has advantages such as low cost and high recovery rate of the raw materials.

IPC 8 full level

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CPC (source: EP KR)

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Citation (search report)

- [X] GB 1400505 A 19750716 - AVESTA JERNVERKS AB
- [X] US 3746533 A 19730717 - MOUSSOULOS L
- [A] JP S62290843 A 19871217 - NIPPON KOKAN KK
- See references of WO 2006045254A1

Cited by

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DOCDB simple family (application)

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