

Title (en)  
METHOD AND INSTALLATION WITH SMELTING AND REDUCTION CYCLONE AND A COUPLED LOWER FURNACE FOR UTILISING RESIDUAL MATERIAL CONTAINING IRON AND HEAVY METALS AND OPTIONALLY IRON ORE

Title (de)  
VERFAHREN UND ANLAGE MIT SCHMELZ/REDUKTIONSZYKLON UND GEKOPPELTEM UNTEROFEN ZUM VERWERTEN VON EISEN- UND SCHWERMETALLHALTIGEN RESTSTOFFEN UND/ODER EISENFEINERZEN

Title (fr)  
PROCEDE ET DISPOSITIF UTILISANT UN CYCLONE DE FUSION/REDUCTION ET UN FOUR INFERIEUR ET PERMETTANT DE VALORISER DES MATIERES RESIDUELLES CONTENANT DU FER ET DES METAUX LOURDS ET/OU DES FINES DE MINERAL DE FER

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Application  
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Abstract (en)  
[origin: WO0070101A1] The invention relates to a method and installation for utilising residual material which contains iron, heavy metals and optionally iron ore. In said method, the following take place: residual material and optionally the iron ore is introduced into a smelting cyclone (1) with a backflow and a base opening which has a narrowed section. Reducing agents and oxygen are additionally introduced into the smelting cyclone (1) and are subjected to swirling. Iron is reduced at least to FeO in the smelting cyclone (1), heavy metals are reduced to metals in the smelting cyclone (1) and are converted into the gas phase by evaporation. The resulting gas which optionally contains heavy metals, the partially reduced iron and the slag are transferred to a furnace (5) which is directly adjacent. Energy, in electrical form is then supplied to said furnace (5), preferably using a direct electric arc. Reducing agents and oxygen, or oxygen-enriched air is then introduced into the furnace (5) and the iron is completely reduced and melted in the furnace (5). The evaporated heavy metals are condensed outside the furnace (5), whereby the iron can be subjected to further processing and a deposition of the residual materials is avoided.

IPC 1-7  
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