

Title (en)

MANUFACTURING METHOD FOR HIGH-CONCENTRATION CARBURIZED STEEL

Title (de)

VERFAHREN ZUR HERSTELLUNG VON HOCHKONZENTRIERTEM AUFGEKOHLTEM STAHL

Title (fr)

PROCÉDÉ DE FABRICATION D'ACIER CÉMENTÉ À HAUTE CONCENTRATION

Publication

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Application

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Abstract (en)

The subject of the present invention is to provide a manufacturing method for high-concentration carburized steel which does not cause reduction of life of a furnace, deformation of steel materials, and reduction of working efficiency and which enables dispersion of fine and spherical carbides in a large amount. This subject can be solved by the manufacturing method for high-concentration carburized steel comprises (i) a primary carburization step of carburizing a steel material having a certain composition at a primary carburization temperature T1(°C) till a surface carbon concentration C becomes a certain carbon concentration, (ii) a cooling step of cooling the steel material to Ar1 point or less at a cooling rate of 1 °C/min or more after completion of the primary carburization step, (iii) a secondary carburization initial step of raising the temperature of the steel material to a secondary carburization start temperature T2s lower than the primary carburization temperature T1 by 100°C or more to carburize the steel material at a secondary carburization temperature T2, (iv) a secondary carburization later step of raising the temperature, after completion of the secondary carburization initial step, to a quenching temperature Tq to further carburize at the quenching temperature of Tq and perform further carburization of the steel material at the quenching temperature Tq, and (v) a quenching step of quenching the steel material after completion of the secondary carburization.

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