

Title (en)
CORROSION RESISTANT MATERIAL

Title (de)
KORROSIONSBESTÄNDIGER WERKSTOFF

Title (fr)
MATERIAU RESISTANT A LA CORROSION

Publication
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Application
EP 01942857 A 20010608

Priority
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Abstract (en)
[origin: WO0202837A1] The invention relates to a material with high corrosion resistance in media with high chloride concentration, suitable for devices in oil-field applications. According to the invention, a paramagnetic material with high yield strength, high notched impact resistance, high fatigue resistance and a low ductile transition temperature with concomitant improved high corrosion resistance, in particular, resistance to hole corrosion can be achieved by production of a material comprising essentially the following elements in wt. %: carbon (C) less than or equal to 0.03; silicon (Si) less than or equal to 0.89; manganese (Mn) 0.51 to 4.49; chromium (Cr) 25.1 to 38.9; molybdenum (Mo) 2.1 to 5.9; nickel (Ni) 22.9 to 38.9; copper (Cu) 0.51 to 1.49; nitrogen (N) 0.17 to 0.19; iron (Fe) the remainder, along with impurities arising during production. Said material is hot-formed in a state free from nitride precipitates and other associated precipitates and, after cooling to give a ferrite-free state is cold-formed and has a permeability of less than 1.0048; a yield strength (Rp02) greater than 710 N/mm²; a notch impact resistance of over 60 J; a fatigue resistance of at least \sqrt{N} 310 N/mm², where N = 10⁷ load reversals and a ductile transition temperature of below - 28 DEG C (FATT).

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