

## Title (en)

Ferritic stainless steel containing sulfur for ferromagnetic parts

## Title (de)

Ferritischer rostfreier schwefelhaltiger Stahl verwendbar für ferromagnetische Werkstücke

## Title (fr)

Acier inoxydable ferritique au soufre, utilisable pour des pieces ferromagnétiques

## Publication

**EP 1314792 A1 20030528 (FR)**

## Application

**EP 02292873 A 20021119**

## Priority

FR 0115240 A 20011126

## Abstract (en)

Ferritic stainless steel for ferromagnetic component production comprises (in weight %): carbon  $\leq 0.030$ , silicon 1.0-3; manganese 0.1-0.5, chromium 10-13, nickel 0- 1, sulfur 0.03- 0.5, phosphorus 0-0.030, molybdenum 0.2-2; copper 0-0.5; nitrogen 0-0.030; titanium 0-0.5; niobium 0-1; aluminum 0-100 x 10<sup>-4</sup>, calcium ( 30-100) x 10<sup>-4</sup>; and O ( 50-150) x 10<sup>-4</sup>. The Ca/O ratio is 0.3-1. <?>Preferred Features: The steel includes calcium silico-aluminate of the type anorthite and/or pseudo-wollastonite and/or gehlenite, associated with chromium and manganese sulfide-type inclusions. <?>Preferably, the steel contains (in weight %) 1.5-2 silicon, 11.8-13 chromium, sulfur 0.10-0.5 (most preferably, 0.10-0.3), 0.4-1 molybdenum, and less than 0.3 manganese. <?>An Independent claim is given for the production of a component formed from the ferritic steel. After hot rolling and cooling, the steel is subjected to drawing, either after optional thermal annealing treatment or without thermal annealing treatment. The drawn steel can be finally submitted to complementary recrystallization annealing, to improve the magnetic properties of the component.

## Abstract (fr)

Acier inoxydable ferritique au soufre utilisable pour des pièces ferromagnétiques caractérisé en ce qu'il comprend dans sa composition pondérale: C  $\leq 0,030\%$ , 1,0% < Si  $\leq 3\%$ , 0,1% < Mn  $\leq 0,5\%$ , 10%  $\leq$  Cr  $\leq 13\%$ , 0% < Ni  $\leq 1\%$ , 0,03 < S < 0,5%, 0% < P  $\leq 0,030\%$ , 0,2% < Mo  $\leq 2\%$ , 0% < Cu  $\leq 0,5\%$ , 0% < N  $\leq 0,030\%$ , 0% < Ti  $\leq 0,5\%$ , 0% < Nb  $\leq 1\%$ , 0% < Al  $\leq 100.10-4\%$ , 30.10-4% < Ca  $\leq 100.10-4\%$ , 50.10-4% < O  $\leq 150.10-4\%$  le rapport entre la teneur en calcium et en oxygène Ca/O étant 0,3  $\leq$  Ca/O  $\leq 1$ , le reste étant du fer et les impuretés inévitables à l'élaboration de l'acier, ainsi qu'un procédé de fabrication de pièces ferromagnétiques.

## IPC 1-7

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## Citation (search report)

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