Title (en)

High-nitrogen austenitic stainless steel

Title (de)

Austenitischer rostfreier Stahl mit hohem Stickstoffgehalt

Title (fr)

Acier austénitique inoxydable à haute teneur en azote

Publication

EP 1626101 B1 20150128 (EN)

Application

EP 05107313 A 20050809

Priority

JP 2004235880 A 20040813

Abstract (en)

[origin: EP1626101A1] This invention provides a high-nitrogen austenitic stainless steel superior to the conventional one both in the corrosion resistance and strength, despite a low Ni content, characterized in having a Fe content of 50 % by mass or more; containing Cr: 15.0% by mass to 35.0% by mass, Mo: 0.05% by mass to 8.0% by mass %, Mn: 0.2% by mass to 10.0% by mass, Cu: 0.01% by mass to 4.0% by mass and N: 0.8% by mass to 1.5% by mass, both ends inclusive, having a C content of 0.20% by mass or less, a Si content of 2.0% by mass or less, a P content of 0.03% by mass or less, a S content of 0.05% by mass or less, a Ni content of 0.5% by mass or less, an Al content of 0.03% by mass or less, and an O content of 0.020% by mass or less; wherein the contents of Cr, Mo, N and Mn are adjusted so that a compositional parameter · expressed by the equation: ·#¡(W Cr +3.3W Mo +16W N)/W Mn ######where W Cr is Cr content (% by mass), W Mo is Mo content (% by mass) W N is N content (% by mass) and W Mn is Mn content (% by mass) has a value of 5 or above. and optionally further containing either one of, or both of: W: 0.01% by mass to 1.0% by mass; and Co: 0.01% by mass to 5.0% by mass, ###### both ends inclusive ; and optionally further containing at least one of: Ti: 0.01% by mass to 0.5% by mass; Nb: 0.01% by mass to 0.5% by mass; V: 0.01% by mass to 1.0% by mass; and Ta: 0.01% by mass to 0.5% by mass, ###### both ends inclusive ; and optionally further containing at least one of: B: 0.001 % by mass to 0.01 % by mass; Zr: 0.01 % by mass to 0.50% by mass; Ca: 0.001% by mass to 0.01% by mass; and Mg: 0.001% by mass to 0.01% by mass, ###### both ends inclusive ; and optionally further containing either one of, or both of: Te: 0.005% by mass to 0.05% by mass; and Se: 0.01% by mass to 0.20% by mass, ###### both ends inclusive.

IPC 8 full level

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