

Title (en)

Hydrogen peroxide pickling of stainless steel

Title (de)

Beizen von rostfreiem Stahl mit Wasserstoffperoxid enthaltende Lösungen

Title (fr)

Décapage d'acier inoxydable avec des solutions contenant du peroxyde d'hydrogène

Publication

EP 0808919 A1 19971126 (EN)

Application

EP 97108296 A 19970522

Priority

- US 66749896 A 19960524
- US 82115497 A 19970320

Abstract (en)

A process for removing scale from stainless steel using an aqueous solution containing hydrogen peroxide and an inorganic acid, i.e., hydrochloric or sulfuric acid. A hot rolled or annealed stainless steel strip (10) covered with scale is immersed into hot inorganic acid contained within pickling tanks (12) and (14). Thereafter, the strip may have residual amounts of tightly adherent scale (11). This scale is activated by a solution containing the inorganic acid and hydrogen peroxide applied to the strip such as by a spray header (16) extending completely transversely across and positioned above the strip and another spray header (18) extending completely transversely across and positioned below the strip. It may be desirable to pass the activated strip through the hot inorganic acid again and reactivate the strip at very high line speeds to insure complete removal of scale from the strip. Any hydrogen peroxide spray dripping from the strip is collected on a catch pan (30) and flowed into a tank (28). Preferably, the collected spent aqueous solution containing the inorganic acid and spent hydrogen peroxide is disposed in the pickling tanks. The aqueous solution aids in the removal of any residual scale and smut remaining on the strip thereby improving the cleanliness of the pickled strip. <IMAGE>

IPC 1-7

C23G 1/08

IPC 8 full level

C23G 1/08 (2006.01)

CPC (source: EP KR)

C23G 1/08 (2013.01 - EP KR); **C23G 1/081** (2013.01 - EP KR)

Citation (search report)

- [Y] DE 4420718 A1 19951221 - GEWERK KERAMCHEMIE [DE]
- [A] EP 0582121 A1 19940209 - ITB SRL [IT]
- [A] US 2895856 A 19590721 - TONNY HONG
- [A] GB 2058140 A 19810408 - FAGERSTA AB
- [Y] DATABASE WPI Section Ch Week 8134, Derwent World Patents Index; Class M12, AN 81-61187D, XP002037896
- [A] CHEMICAL ABSTRACTS, vol. 84, no. 22, 31 May 1976, Columbus, Ohio, US; abstract no. 154059x, TSUKAMURA: "Descaling of stainless steel" XP002037895 & JP S5096431 A 19750731
- [A] PATENT ABSTRACTS OF JAPAN vol. 007, no. 151 (C - 174) 1 July 1983 (1983-07-01)

Cited by

CN105887103A; CN114959717A; CN105908195A; CN106011886A; CN105908196A; AU2002307176B2; CN105887104A; CN114011790A; WO02081776A1; WO02081380A1; EP3029163B1

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