

Title (en)

Process for manufacturing corrosion resistant steel bottles or vessels

Title (de)

Verfahren zur Herstellung von korrosionsbeständigen Flaschen oder Behältern aus Stahl

Title (fr)

Procédé pour la fabrication de bouteilles ou de récipients résistants à la corrosion en acier

Publication

EP 0848069 B1 20010822 (DE)

Application

EP 97250346 A 19971117

Priority

DE 19652335 A 19961203

Abstract (en)

[origin: EP0848069A2] Producing seamless corrosion resistant steel gas bottles, for use in contact with high purity and/or corrosive gases and/or liquids, involves the composition (by wt.) 0.02-0.06% C, 0.15-0.30% Si, 1.60-1.80% Mn, not >0.035% P, not >0.008% S, not >0.020% Al, 12.5-13.5% Cr, 0.3-0.8% Ni, not >0.07% V, 0.025-0.060% Nb, not less than 0.03% W, not >0.01% Ti, 0.010-0.035% N, balance Fe and impurities, where the sum of C + N is not >0.07% and the sum of V + Ti is not >0.07%. A first process involves (a) hot extruding a bottle preform from a steel ingot; (b) soft annealing the preform at 650-750[deg]C; (c) cold extruding at room temperature to the desired final wall thickness; (d) roll forming a bottle neck at 1150-1250[deg]C; (e) hardening and tempering; and (f) descaling the steel bottle interior and exterior. Also claimed is are (I) second process involves (a') deep drawing a soft annealed blank of hot rolled steel sheet to form a bottle sleeve; and (b') carrying out the above steps (d), (e) and (f), and (II) third process involves (a'') subjecting a seamless steel tube to end spinning or forging to form the bottom or bottle neck; and (b'') carrying out the above steps (e) and (f).

IPC 1-7

C21D 8/10; **C22C 38/38**

IPC 8 full level

B21D 51/18 (2006.01); **B21D 51/24** (2006.01); **C21D 8/10** (2006.01); **C22C 38/38** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP)

B21D 51/18 (2013.01); **B21D 51/24** (2013.01); **C21D 8/105** (2013.01); **C22C 38/58** (2013.01)

Cited by

KR20030005591A; DE102008049990A1; DE102008049990B4; DE102021109866B3

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB IT LI NL SE

DOCDB simple family (publication)

EP 0848069 A2 19980617; **EP 0848069 A3 19990602**; **EP 0848069 B1 20010822**; AT E204611 T1 20010915; DE 19652335 C1 19980312; DE 59704363 D1 20010927; DK 0848069 T3 20011008; ES 2159809 T3 20011016

DOCDB simple family (application)

EP 97250346 A 19971117; AT 97250346 T 19971117; DE 19652335 A 19961203; DE 59704363 T 19971117; DK 97250346 T 19971117; ES 97250346 T 19971117