

Title (en)

Process for machining the surface of a nickel base superalloy workpiece.

Title (de)

Verfahren zum Behandeln der Oberfläche eines Werkstückes aus einer Superlegierung auf Nickelbasis.

Title (fr)

Procédé pour le traitement de la surface d'une pièce en superalliage à base de nickel.

Publication

EP 0049207 A1 19820407 (EN)

Application

EP 81630055 A 19810923

Priority

US 19266880 A 19801001

Abstract (en)

Disclosed is a process for machining nickel-base superalloys wherein a thermal-effect process, such as laser or electric discharge machining, is first used to remove material but leaves a recast layer. Next a chemical milling process is used wherein the etchant only attacks and removes the recast layer. The etchant is comprised by volume percent of 40-60 HNO₃, 5-20 HCl, and 20-55 H₂O, with which is included 0.016-0.025 moles/liter FeCl₃ and at least 0.008 moles/liter CuSO₄. The FeCl₃ improves removal rate but tends to cause unwanted pitting and intergranular attack. These tendencies are inhibited by the addition of CuSO₄; preferably the molar ratio of CuSO₄ to FeCl₃ is 2:1. The beneficial combination of FeCl₃ and CuSO₄ is usable in other etchants.

IPC 1-7

C23F 1/00; C09K 13/04; C23G 1/10

IPC 8 full level

C23F 1/28 (2006.01); **C23F 1/44** (2006.01)

CPC (source: EP)

C23F 1/28 (2013.01)

Citation (search report)

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Designated contracting state (EPC)

BE CH DE FR GB IT NL SE

DOCDB simple family (publication)

EP 0049207 A1 19820407; **EP 0049207 B1 19840912**; AU 544833 B2 19850613; AU 7562281 A 19820408; BR 8106057 A 19820608; CA 1165670 A 19840417; DE 3166048 D1 19841018; DK 395481 A 19820402; ES 505893 A0 19820616; ES 8205877 A1 19820616; IL 63859 A0 19811231; IL 63859 A 19840531; JP S5789484 A 19820603; JP S5824505 B2 19830521; NO 154759 B 19860908; NO 154759 C 19861217; NO 813191 L 19820402

DOCDB simple family (application)

EP 81630055 A 19810923; AU 7562281 A 19810923; BR 8106057 A 19810922; CA 386146 A 19810917; DE 3166048 T 19810923; DK 395481 A 19810908; ES 505893 A 19810930; IL 6385981 A 19810916; JP 15471781 A 19810928; NO 813191 A 19810921