

Title (en)
PROCESS FOR MACHINING THE SURFACE OF A NICKEL BASE SUPERALLOY WORKPIECE

Publication
EP 0049207 B1 19840912 (EN)

Application
EP 81630055 A 19810923

Priority
US 19266880 A 19801001

Abstract (en)
[origin: EP0049207A1] 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.

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IPC 8 full level
C23F 1/28 (2006.01); **C23F 1/44** (2006.01)

CPC (source: EP)
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Cited by
CN115386879A; CN108385108A; CN104020033A; FR2507198A1; FR3144931A1

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