

Title (en)
PROTECTIVE LAYER FOR AN ALUMINIUM-CONTAINING ALLOY FOR USING AT HIGH TEMPERATURES, AND METHOD FOR PRODUCING ONE SUCH PROTECTIVE LAYER

Title (de)
SCHUTZSCHICHT FÜR EINE ALUMINIUMHALTIGE LEGIERUNG FÜR DEN EINSATZ BEI HOHEN TEMPERATUREN, SOWIE VERFAHREN ZUR HERSTELLUNG EINER SOLCHEN SCHUTZSCHICHT

Title (fr)
COUCHE DE PROTECTION D'UN ALLIAGE CONTENANT DE L'ALUMINIUM À DES FINS D'UTILISATION À DES TEMPÉRATURES ÉLEVÉES ET PROCÉDE DE PRODUCTION DE CETTE COUCHE DE PROTECTION

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Application
EP 04802781 A 20041120

Priority
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Abstract (en)
[origin: WO2005071132A1] Alloys containing aluminium are characterised by an outstanding oxidation resistance at high temperatures, that is based on, inter alia, the formation of a thick and slow-growing aluminium oxide layer on material surfaces. If the formation of the aluminium oxide layer reduces the aluminium content of the alloy so far that a critical aluminium concentration is not reached, no other protective aluminium oxide layer can be formed. This leads disadvantageously to a very rapid breakaway oxidation, and the destruction of the component. This effect is stronger at temperatures above 800 °C due to the fact that, often at this point, metastable A12O3 modifications, especially theta- or gamma-A12O3, are formed instead of alpha-A12O3 that is generally formed at high temperatures. The above-mentioned oxide modifications are disadvantageously characterised by significantly higher growth rates. The invention relates to methods whereby aluminium-containing alloys advantageously form an oxidic covering layer predominantly consisting of alpha-Al2O3, at a temperature higher than 800 °C, especially in the initial stage of oxidation, and thus have a significantly improved long-term behaviour.

IPC 8 full level
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CPC (source: EP US)
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See references of WO 2005071132A1

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