

Title (en)  
ALUMINUM-SCANDIUM ALLOYS AND USES THEREOF

Title (de)  
ALUMINIUM-SCANDIUM LEGIERUNGEN UND VERWENDUNGEN

Title (fr)  
ALLIAGES ALUMINIUM-SCANDIUM ET LEURS UTILISATIONS

Publication  
**EP 0760727 A1 19970312 (EN)**

Application  
**EP 95921434 A 19950524**

Priority  
• US 9506684 W 19950524  
• US 24902394 A 19940525  
• US 41080195 A 19950327

Abstract (en)  
[origin: WO9532074A2] A method for assembling a structure using a filler alloy which includes aluminum and scandium. The method generally includes selecting parts for the structure which are formed from aluminum and/or an aluminum alloy and welding the same together with the aluminum-scandium filler alloy. Similar to the filler alloy, the parts may also include scandium. In one embodiment, the filler alloy and/or the parts further include zirconium. A method for assembling a bicycle frame is also provided. The method includes the steps of forming a first tube, at least a portion of which comprises scandium, forming a second tube, at least a portion of which comprises scandium, and joining the first and second tubes together. A number of aluminum-based alloys are also disclosed which possess enhanced properties. The alloys include scandium in combination with other alloying elements such as, for example, zirconium, copper, magnesium and silicon. Furthermore, applications for aluminum alloys containing scandium with or without zirconium additions. Such modified aluminum alloys possess enhanced properties and exhibit improved processing characteristics, and, as such, are especially suited for use in recreational and athletic structures and components, and in certain aerospace, ground transportation and marine structures and components.

IPC 1-7  
**B23K 35/28**

IPC 8 full level  
**A63B 53/04** (2006.01); **A63B 49/12** (2006.01); **A63B 53/12** (2006.01); **A63C 11/22** (2006.01); **B23K 9/23** (2006.01); **B23K 35/28** (2006.01); **B62D 29/00** (2006.01); **B63B 3/09** (2006.01); **C22C 21/00** (2006.01); **C22C 21/02** (2006.01); **C22C 21/06** (2006.01); **C22C 21/10** (2006.01); **C22C 21/12** (2006.01); **C22C 21/16** (2006.01); **F41B 13/10** (2006.01); **F42B 15/22** (2006.01)

CPC (source: EP)  
**B23K 35/286** (2013.01); **C22C 21/00** (2013.01); **C22C 21/02** (2013.01); **C22C 21/10** (2013.01); **C22C 21/16** (2013.01)

Citation (search report)  
• [Y] US 4689090 A 19870825 - SAWTELL RALPH R [US], et al  
• [Y] US 3619181 A 19711109 - WILLEY LOWELL A  
• [Y] EP 0368005 A1 19900516 - ALUMINUM CO OF AMERICA [US]  
• [Y] WO 9424326 A1 19941027 - ALCAN INT LTD [CA], et al  
• [Y] US 4869870 A 19890926 - RIOJA ROBERTO J [US], et al  
• [A] US 5061327 A 19911029 - DENZER DIANA K [US], et al  
• [PX] WO 9526420 A1 19951005 - COLLIN JEAN PIERRE [FR]  
• [Y] CHEMICAL ABSTRACTS, vol. 116, no. 8, 24 February 1992, Columbus, Ohio, US; abstract no. 64940, ROYANOV, A. A. ET AL: "Aluminum-magnesium-silicon alloy" XP002130495 & SU 1657538 A1 19910623 - INST METALLURGII IMENI AA BAIK [SU]  
• [Y] DATABASE WPI Week 199413, Derwent World Patents Index; AN 1994-107663, XP002130496  
• [A] KHARAKTEROVA M L ET AL: "PRECIPITATION HARDENING IN TERNARY ALLOYS OF THE AL-SC-CU AND AL-SC-SI SYSTEMS", ACTA METALLURGICA & MATERIALIEN, GB, PERGAMON / ELSEVIER SCIENCE LTD, vol. 42, no. 7, 1 January 1994 (1994-01-01), pages 2285 - 2290, XP000563099, ISSN: 0956-7151  
• See references of WO 9532074A2

Citation (third parties)  
Third party :  
US 5055257 A 19911008 - CHAKRABARTI DHRUBA J [US], et al

Cited by  
RU2754792C1; US11471984B2; US10443447B2

Designated contracting state (EPC)  
AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)  
**WO 9532074 A2 19951130; WO 9532074 A3 19960314**; AU 2651595 A 19951218; CA 2190951 A1 19951130; EP 0760727 A1 19970312; IL 113867 A0 19950831; JP H10505282 A 19980526; NO 964958 D0 19961121; NO 964958 L 19970114

DOCDB simple family (application)  
**US 9506684 W 19950524**; AU 2651595 A 19950524; CA 2190951 A 19950524; EP 95921434 A 19950524; IL 11386795 A 19950525; JP 53054695 A 19950524; NO 964958 A 19961121