

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 096 028 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
06.02.2002 Bulletin 2002/06

(51) Int Cl.7: **C22C 21/04**

(43) Date of publication A2:
02.05.2001 Bulletin 2001/18

(21) Application number: **00309071.9**

(22) Date of filing: **16.10.2000**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **21.10.1999 JP 29957899**

(71) Applicant: **KABUSHIKI KAISHA DAIKI
ALUMINIUM KOGYOSHO
Yao-shi Osaka (JP)**

(72) Inventors:
• **Takao, Suzuki,**
c/o K. K. Daiki Aluminium Kogyosho
Yao-shi, Osaka (JP)
• **Oshiro, Naoto,**
c/o K. K. Daiki Aluminium Kogyosho
Yao-shi, Osaka (JP)

(74) Representative: **Freed, Arthur Woolf et al**
Edward Evans Barker Clifford's Inn Fetter Lane
London EC4A 1BZ (GB)

(54) **High-strength aluminum alloy for pressure casting and cast aluminum alloy comprising the same**

(57) Disclosed is a high-strength cast aluminum alloy obtained by: casting a high-strength aluminum alloy containing 3.5-4.3 % of Cu, 5.0-7.5 % of Si, 0.10-0.25 % of Mg, not more than 0.2 % of Fe, not more than 0.0003 % of P, and the balance comprising Al and unavoidable impurities; and subjecting the alloy thus cast to a T6 treatment. This cast alloy has finer eutectic Si

grains by virtue of such a very low P content, enjoys casting and economic merits that are competitive with existing alloys, and satisfies higher mechanical requirements as to tensile strength, elongation, 0.2% proof strength and impact value.

EP 1 096 028 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 30 9071

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	PATENT ABSTRACTS OF JAPAN vol. 1996, no. 12, 26 December 1996 (1996-12-26) -& JP 08 199275 A (DAIKI ALUM KOGYOSHOKU), 6 August 1996 (1996-08-06) * abstract *	1,4-6,9, 12	C22C21/04
Y	--- PATENT ABSTRACTS OF JAPAN vol. 1999, no. 03, 31 March 1999 (1999-03-31) -& JP 10 317085 A (TOYOTA MOTOR CORP), 2 December 1998 (1998-12-02) * abstract *	1,4-6,9, 12	
Y	--- PATENT ABSTRACTS OF JAPAN vol. 1998, no. 11, 30 September 1998 (1998-09-30) -& JP 10 158772 A (HITACHI METALS LTD), 16 June 1998 (1998-06-16) * abstract *	1,4-6,9, 12	
Y	--- PATENT ABSTRACTS OF JAPAN vol. 1996, no. 01, 31 January 1996 (1996-01-31) -& JP 07 242975 A (HITACHI METALS LTD), 19 September 1995 (1995-09-19) * abstract *	1,4-6,9, 12	TECHNICAL FIELDS SEARCHED (Int.Cl.7) C22C
A	--- PATENT ABSTRACTS OF JAPAN vol. 1998, no. 02, 30 January 1998 (1998-01-30) & JP 09 263867 A (MITSUBISHI CHEM CORP;MITSUBISHI MOTORS CORP), 7 October 1997 (1997-10-07) * abstract *	2,7,10, 13	
-/--			
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 11 December 2001	Examiner Ashley, G
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 30 9071

DOCUMENTS CONSIDERED TO BE RELEVANT				
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)	
A	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 14, 31 December 1998 (1998-12-31) & JP 10 251790 A (HITACHI METALS LTD), 22 September 1998 (1998-09-22) * abstract *	2,7,10, 13		
A	--- PATENT ABSTRACTS OF JAPAN vol. 017, no. 274 (C-1064), 27 May 1993 (1993-05-27) & JP 05 009637 A (NIPPON LIGHT METAL CO LTD;OTHERS: 02), 19 January 1993 (1993-01-19) * abstract *	2,7,10, 13		
A	--- EP 0 618 303 A (HITACHI METALS LTD) 5 October 1994 (1994-10-05) * page 4, line 15 - line 16 * * page 4, line 37 - line 38 *	3,8,11, 14		
A	--- US 4 786 340 A (OGAWA MASAHIRO ET AL) 22 November 1988 (1988-11-22) * abstract; table 1 *	3,8,11, 14		TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	--- PATENT ABSTRACTS OF JAPAN vol. 018, no. 468 (C-1244), 31 August 1994 (1994-08-31) & JP 06 145866 A (UBE IND LTD), 27 May 1994 (1994-05-27) * abstract; table 1 * -----	3,8,11, 14		
The present search report has been drawn up for all claims				
Place of search MUNICH		Date of completion of the search 11 December 2001	Examiner Ashley, G	
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document		

EPO FORM 1503 03/82 (P04/C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 9071

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

11-12-2001

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
JP 08199275	A	06-08-1996	NONE		
JP 10317085	A	02-12-1998	NONE		
JP 10158772	A	16-06-1998	NONE		
JP 07242975	A	19-09-1995	NONE		
JP 09263867	A	07-10-1997	NONE		
JP 10251790	A	22-09-1998	NONE		
JP 05009637	A	19-01-1993	JP	2551882 B2	06-11-1996
EP 0618303	A	05-10-1994	DE	69403716 D1	17-07-1997
			DE	69403716 T2	23-10-1997
			EP	0618303 A1	05-10-1994
			JP	2820884 B2	05-11-1998
			JP	6330204 A	29-11-1994
			US	5462612 A	31-10-1995
US 4786340	A	22-11-1988	JP	4071983 B	17-11-1992
			JP	62074043 A	04-04-1987
			CA	1287987 A1	27-08-1991
			DE	3632609 A1	16-04-1987
			FR	2588017 A1	03-04-1987
JP 06145866	A	27-05-1994	NONE		