

Title (en)  
GAS BUBBLING ELEMENT AND CORRESPONDING GAS BUBBLING SYSTEM

Title (de)  
GASSPÜLELEMENT UND ZUGEHÖRIGE GASSPÜLEINRICHTUNG

Title (fr)  
ELEMENT DE BARBOTEUR ET DISPOSITIF DE BARBOTEUR CORRESPONDANT

Publication  
**EP 1599610 A2 20051130 (DE)**

Application  
**EP 04717036 A 20040304**

Priority  
• EP 2004002153 W 20040304  
• RU 2003106304 A 20030306

Abstract (en)  
[origin: WO2004079019A2] The invention relates to a refractory ceramic gas bubbling element for a metallurgical crucible and to a corresponding gas bubbling system comprising such a gas bubbling element.

IPC 1-7  
**C21C 5/48; B22D 1/00**

IPC 8 full level  
**B22D 1/00** (2006.01); **C21C 5/48** (2006.01); **C21C 7/072** (2006.01)

CPC (source: EP US)  
**B22D 1/005** (2013.01 - EP US); **C21C 5/48** (2013.01 - EP US)

Citation (search report)  
See references of WO 2004079019A2

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**WO 2004079019 A2 20040916; WO 2004079019 A3 20041111**; AT E362551 T1 20070615; BR PI0408138 A 20060301;  
CN 1784500 A 20060607; CN 1784500 B 20100721; DE 502004003839 D1 20070628; EA 007214 B1 20060825; EA 200501351 A1 20060224;  
EP 1599610 A2 20051130; EP 1599610 B1 20070516; ES 2286614 T3 20071201; JP 2006519930 A 20060831; LV 13402 B 20060420;  
MX PA05009482 A 20060310; NO 20054181 D0 20050908; NO 20054181 L 20050908; PL 1599610 T3 20070831; PT 1599610 E 20070621;  
RU 2230796 C1 20040620; UA 83213 C2 20080625; US 2008136070 A1 20080612; ZA 200507094 B 20060628

DOCDB simple family (application)  
**EP 2004002153 W 20040304**; AT 04717036 T 20040304; BR PI0408138 A 20040304; CN 200480011987 A 20040304;  
DE 502004003839 T 20040304; EA 200501351 A 20040304; EP 04717036 A 20040304; ES 04717036 T 20040304; JP 2006504525 A 20040304;  
LV 050132 A 20051004; MX PA05009482 A 20040304; NO 20054181 A 20050908; PL 04717036 T 20040304; PT 04717036 T 20040304;  
RU 2003106304 A 20030306; UA 2005009349 A 20040304; US 54786104 A 20040304; ZA 200507094 A 20050905