

Title (en)

DEVICE AND METHOD FOR MELTING A SUBSTANCE WITH THE OCCURRENCE OF A LOW LEVEL OF CONTAMINATION

Title (de)

VORRICHTUNG UND VERFAHREN ZUM KONTAMINATIONSARMEN SCHMELZEN VON GLAS ODER GLASKERAMIK

Title (fr)

DISPOSITIF ET PROCEDE DE FUSION A FAIBLE CONTAMINATION D'UNE SUBSTANCE

Publication

EP 1434741 A2 20040707 (DE)

Application

EP 02779342 A 20020912

Priority

- DE 10148754 A 20011002
- DE 10149309 A 20011002
- DE 10202024 A 20020118
- EP 0210242 W 20020912

Abstract (en)

[origin: WO03031353A2] The invention relates to a device and method for melting, with the occurrence of a low level of contamination, a glass or glass-ceramic material that is highly pure, aggressive and/or has a high melting point. According to the invention, a melt is heated in a crucible or a melt-down skull crucible using high-frequency irradiation and is mixed or homogenized in the melt-down crucible. A gas nozzle is preferably provided on the bottom of the crucible out of which gas bubbles, e.g. oxygen bubbles (so called O2 bubbling) are discharged into the melt. This makes it possible to already achieve a surprising multiple utilization inside the melt-down skull crucible. Firstly, the unmelted quantity that falls, for example, from above into the melt in solid form is melted more quickly by the increased thorough mixing thereof with the liquid portion of the melt. Secondly, the temperature distribution of the melt is evened out. Thirdly, the different glass constituents are uniformly distributed or thoroughly mixed and, fourthly, the redox state of the glass can be adjusted.

IPC 1-7

C03B 5/02

IPC 8 full level

C03B 5/02 (2006.01); **C03B 5/06** (2006.01); **C03B 1/02** (2006.01); **C03B 3/00** (2006.01); **C03B 5/18** (2006.01); **C03B 5/187** (2006.01); **C03B 5/193** (2006.01); **C03B 5/20** (2006.01); **C03B 5/26** (2006.01); **C03C 3/097** (2006.01); **C03C 4/00** (2006.01)

CPC (source: EP US)

C03B 1/02 (2013.01 - EP US); **C03B 3/00** (2013.01 - EP US); **C03B 5/021** (2013.01 - EP US); **C03B 5/18** (2013.01 - EP US); **C03B 5/187** (2013.01 - EP US); **C03B 5/193** (2013.01 - EP US); **C03B 5/205** (2013.01 - EP US); **C03B 5/265** (2013.01 - EP US); **C03C 3/097** (2013.01 - EP US); **C03C 4/0007** (2013.01 - EP US); **C03B 2211/70** (2013.01 - EP US); **C03B 2211/71** (2013.01 - EP US); **Y02P 40/57** (2015.11 - EP US); **Y10S 65/04** (2013.01 - EP US)

Citation (search report)

See references of WO 03031353A2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

DOCDB simple family (publication)

WO 03031353 A2 20030417; **WO 03031353 A3 20030821**; AU 2002342681 A1 20030422; AU 2002342681 A8 20030422; CN 1278964 C 20061011; CN 1555345 A 20041215; EP 1434741 A2 20040707; JP 2005523861 A 20050811; JP 4481641 B2 20100616; US 2005005646 A1 20050113; US 7296441 B2 20071120

DOCDB simple family (application)

EP 0210242 W 20020912; AU 2002342681 A 20020912; CN 02818183 A 20020912; EP 02779342 A 20020912; JP 2003534343 A 20020912; US 49080304 A 20040826