

Title (en)  
METHOD AND EQUIPMENT FOR MANUFACTURING DEEP-FROZEN BEADS

Title (de)  
VERFAHREN UND EINRICHTUNG ZUR HERSTELLUNG VON TIEFGEFRORENEN KÜGELCHEN

Title (fr)  
PROCEDE ET INSTALLATION DE FABRICATION DE BILLES SURGELEES

Publication  
**EP 2373936 A1 20111012 (FR)**

Application  
**EP 09795488 A 20091123**

Priority  
• FR 2009052250 W 20091123  
• FR 0858256 A 20081204

Abstract (en)  
[origin: WO2010063918A1] The present invention relates to a method for manufacturing solid particles from a liquid or semi-liquid composition (1) using a device for totally or partially deep-freezing a material, the deep-freezing device being of the type where the material is placed, in a treatment tank (10), in contact with a refrigerating surface that results from the use of a vibrating carrier and a cryogenic liquid film placed on said carrier, and where the excess cryogenic liquid leaves the device along with the materials and is separated from the materials by a separation system (7) located outside the device, the thus-retrieved cryogenic liquid (7) being collected then pumped by a pump (8) so as to be reused in the equipment. The invention is characterized in that the following measures are implemented: - the equipment comprises at least one chute (6), comprising a conduit structure on all or part of the length thereof; - the equipment comprises a system (2) for producing and depositing drops of said composition into each of said conduits; - the equipment comprises a system for supplying cryogenic liquid to each of said conduits; - the system for producing drops is positioned in the immediate vicinity of the system for supplying cryogenic liquid so as to allow each drop that is produced by the system for producing drops to encounter the stream of cryogenic liquid produced by one of the openings in said system for supplying cryogenic liquid, and also to allow each drop to be carried by said stream to the conduit, that corresponds to the stream, and to the cryogenic film flowing thereon.

IPC 8 full level  
**F25C 1/00** (2006.01); **B01J 2/06** (2006.01); **F25D 3/10** (2006.01); **F25D 3/11** (2006.01)

CPC (source: EP)  
**A23L 3/375** (2013.01); **B01J 2/04** (2013.01); **B01J 2/18** (2013.01); **F25C 1/00** (2013.01); **F25D 3/10** (2013.01)

Citation (search report)  
See references of WO 2010063918A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2010063918 A1 20100610**; EP 2373936 A1 20111012; FR 2939499 A1 20100611; FR 2939499 B1 20110107

DOCDB simple family (application)  
**FR 2009052250 W 20091123**; EP 09795488 A 20091123; FR 0858256 A 20081204