Title (en)
METHOD FOR FREEZING A LIQUID

Title (de)
VERFAHREN ZUM EINFRIEREN EINER FLÜSSIGKEIT

Title (fr)
PROCÉDÉ POUR CONGELER UN LIQUIDE

Publication
EP 3685109 A1 20200729 (DE)

Application
EP 18772707 A 20180912

Priority
• AT 507882017 A 20170919
• AT 2018060207 W 20180912

Abstract (en)
[origin: WO2019056031A1] The invention relates to a method for freezing a liquid (3) located in a container (2), in particular a liquid drug, wherein the container (2) is exposed to a cold gas in order to freeze the liquid, the cold gas preferably flowing around the container, and/or is cooled in another way in order to freeze the liquid, the container (2) is insulated at a surface of at least one first volume portion of the container (2), and the container (2) is cooled nearly immediately at a surface of a second volume portion of the container (2) by means of the cold gas such that the liquid freezes through later in the at least one first volume portion than in the second volume portion.

IPC 8 full level
F25C 1/22 (2018.01); **F25D 3/10** (2006.01); **F25D 25/00** (2006.01)

CPC (source: AT EP KR US)
F25C 1/22 (2013.01 - EP KR); **F25D 3/00** (2013.01 - AT); **F25D 3/10** (2013.01 - EP KR); **F25D 11/04** (2013.01 - US); **F25D 17/04** (2013.01 - US); **F25D 25/005** (2013.01 - EP KR); F25D 2201/126 (2013.01 - US)

Citation (search report)
See references of WO 2019056031A1

Designated contracting state (EPC)
AL 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 RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
WO 2019056031 A1 20190328; AT 520285 A4 20190315; AT 520285 B1 20190315; CN 111247380 A 20200605; EP 3685109 A1 20200729; KR 102357006 B1 20220208; KR 20200055755 A 20200521; US 11635246 B2 20230425; US 2020217579 A1 20200709

DOCDB simple family (application)
AT 2018060207 W 20180912; AT 507882017 A 20170919; CN 201880068693 A 20180912; EP 18772707 A 20180912; KR 20207010931 A 20180912; US 202016822250 A 20200318