

Title (en)

Cooling device for stabilising a container structure

Title (de)

Kühlleinrichtung zum Stabilisieren einer Behältnisstruktur

Title (fr)

Dispositif de réfrigération pour stabiliser une structure de récipient

Publication

EP 2338830 B1 20170125 (DE)

Application

EP 10194464 A 20101210

Priority

DE 102009060655 A 20091222

Abstract (en)

[origin: EP2338830A2] The apparatus has a transport device for transporting containers. A filling device is provided for filling the containers. A tempering device i.e. cooling device, tempers a bottom area of the containers. The tempering device is arranged partially below the bottom area of the transported containers. The filling device is arranged partially above a mouth area of the transported containers. The tempering device is arranged on the apparatus so that tempering during or after the filling operation is possible. An independent claim is also included for a method for filling containers.

IPC 8 full level

B67C 3/14 (2006.01); **B67C 3/04** (2006.01)

CPC (source: EP US)

B67C 3/045 (2013.01 - EP US); **B67C 3/14** (2013.01 - EP US); **B67C 2003/226** (2013.01 - EP US)

Citation (opposition)

Opponent : KHS Corpoplast GmbH

- WO 2008120115 A2 20081009 - AISAPACK HOLDING SA [CH], et al
- US 5251424 A 19931012 - ZENGER RICHARD D [US], et al
- DE 1158398 B 19631128 - ENZINGER UNION WERKE AG
- US 4450878 A 19840529 - TAKADA TAKUZO [JP], et al
- WO 2006079754 A2 20060803 - BEDIN OLIVIER [FR]
- DE 19520925 A1 19961212 - KHS MASCH & ANLAGENBAU AG [DE]
- US 6502369 B1 20030107 - ANDISON DAVID [CA], et al
- WO 2008055685 A1 20080515 - KRONES AG [DE], et al
- DE 602005002566 T2 20080626 - SIDEL PARTICIPATIONS [FR]
- DE 2002007008120 U1 20070816 - KRONES AG [DE]
- DE 3029685 A1 19820318 - BOSCH GMBH ROBERT [DE]
- DE 3210341 A1 19830922 - BREUNUNG ERNST DR ING
- DE 102005053005 A1 20070510 - KELTEREI WALTER GMBH & CO KG [DE]
- EP 1964782 A1 20080903 - TOYO SEIKAN KAISHA LTD [JP]
- DE 102008026043 A1 20091203 - KHS AG [DE]
- WO 2005070814 A1 20050804 - KLINETSKY EVGENY FEDOROVICH [RU]
- WO 2005070815 A1 20050804 - KLINETSKY EVGENY FEDOROVICH [RU]
- DE 102008018516 A1 20091015 - KRONES AG [DE]
- DE 102007016159 A1 20081016 - SIG TECHNOLOGY AG [CH]
- US 6378571 B1 20020430 - SCHULTZ ROBERT H [US], et al
- WO 2005014464 A1 20050217 - ALCOA CLOSURE SYSTEMS INT INC [US], et al
- EP 0421597 A1 19910410 - GUINNESS SON & CO LTD A [IE]
- WO 2004037706 A2 20040506 - ADELHOLZENER ALPENQUELLEN GMBH [DE], et al

Cited by

DE102019131242A1; EP2366657A3; DE102019131242B4

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

DOCDB simple family (publication)

EP 2338830 A2 20110629; EP 2338830 A3 20130102; EP 2338830 B1 20170125; CN 102115022 A 20110706; CN 102115022 B 20140813;
DE 102009060655 A1 20110630; US 2011146837 A1 20110623; US 8573266 B2 20131105

DOCDB simple family (application)

EP 10194464 A 20101210; CN 201010590198 A 20101206; DE 102009060655 A 20091222; US 96334410 A 20101208