Title (en)

VESSEL WITH A REINFORCED CORRUGATED MEMBRANE

Title (de)

GEFÄSS MIT VERSTÄRKTER GEWELLTER MEMBRAN

Title (fr)

CUVE A MEMBRANE ONDULÉE RENFORCÉE

Publication

EP 2337984 A1 20110629 (FR)

Application

EP 09784452 A 20090630

Priority

- FR 2009051267 W 20090630
- FR 0805567 A 20081008

Abstract (en)

[origin: WO2010040922A1] The invention relates to a sealed and thermally insulated vessel having at least one wall including a sealed membrane to be in contact with the product contained in the vessel, and a thermally insulating layer adjacent to said membrane, wherein the membrane includes at least one plate (1) having at least one corrugation (2, 3), characterised in that the vessel includes a reinforcing member (5) inserted under the corrugation between the membrane and the thermally insulating layer.

IPC 8 full level

F17C 3/02 (2006.01)

CPC (source: EP KR)

F17C 3/027 (2013.01 - EP KR); F17C 2201/0157 (2013.01 - EP KR); F17C 2201/052 (2013.01 - EP KR); F17C 2203/012 (2013.01 - EP KR); F17C 2209/232 (2013.01 - EP KR); F17C 2221/033 (2013.01 - EP KR); F17C 2223/0161 (2013.01 - EP KR); F17C 2223/033 (2013.01 - EP KR); F17C 2260/011 (2013.01 - EP KR); F17C 2270/0107 (2013.01 - EP KR)

Citation (search report)

See references of WO 2010040922A1

Citation (third parties)

Third party :

- JP S55122600 U 19800830
- JP S5578896 A 19800613 - KAWASAKI HEAVY IND LTD
- EP 2261110 A2 20101215 - SAMSUNG HEAVY IND [KR]
- JP S5452317 A 19790424 - ISHIKAWAJIMA HARIMA HEAVY IND & JP S5452317 K1
- JP 2011530521 A 20111222

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 TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

FR 2936784 A1 20100409; **FR 2936784 B1 20101008**; AU 2009301016 A1 20100415; AU 2009301016 B2 20160114; BR PI0920667 A2 20160112; BR PI0920667 B1 20200512; CN 102177389 A 20110907; CN 102588732 A 20120718; CN 102588732 B 20141210; CN 102588733 A 20120718; CN 102588733 B 20141210; EP 2337984 A1 20110629; EP 2337984 B1 20191127; EP 2453159 A2 20120516; EP 2453159 A3 20121212; EP 2453159 B1 20200729; EP 2455650 A2 20120523; EP 2455650 A3 20121212; EP 2455650 B1 20191030; ES 2767975 T3 20200619; ES 2821391 T3 20210426; JP 2012111558 A 20120614; JP 2012144298 A 20120802; JP 2012505125 A 20120301; JP 5379234 B2 20131225; JP 5379258 B2 20131225; JP 5778606 B2 20150916; KR 101645155 B1 20160803; KR 102594126 B1 20231024; KR 20110070998 A 20110627; KR 20120031312 A 20120402; KR 20120031313 A 20120402; KR 20140042936 A 20140407; KR 20160027222 A 20160309; KR 20170115105 A 20171016; KR 20220003163 A 20220107; MX 2011003688 A 20110502; MY 154077 A 20150430; MY 174853 A 20200519; RU 2011116959 A 20121110; RU 2012105125 A 20130820; RU 2012107912 A 20130910; RU 2505737 C2 20140127; RU 2533271 C2 20141120; RU 2535293 C2 20141210; WO 2010040922 A1 20100415

DOCDB simple family (application)

FR 0805567 A 20081008; AU 2009301016 A 20090630; BR PI0920667 A 20090630; CN 200980139843 A 20090630; CN 201210056536 A 20090630; CN 201210056610 A 20090630; EP 09784452 A 20090630; EP 12154056 A 20090630; EP 12155836 A 20090630; ES 09784452 T 20090630; ES 12154056 T 20090630; FR 2009051267 W 20090630; JP 2011530521 A 20090630; JP 2012066539 A 20120323; JP 2012066540 A 20120323; KR 20117010310 A 20090630; KR 20127006124 A 20090630; KR 20127006125 A 20090630; KR 20147007291 A 20090630; KR 20167004287 A 20090630; KR 20177026964 A 20090630; KR 20217043168 A 20090630; MX 2011003688 A 20090630; MY PI20111568 A 20090630; MY PI2014002054 A 20090630; RU 2011116959 A 20090630; RU 2012105125 A 20090630; RU 2012107912 A 20090630