

Title (en)
MULTILAYER STRUCTURE FOR TRANSPORTING OR STORING HYDROGEN

Title (de)
MEHRSCHICHTIGE STRUKTUR ZUM TRANSPORT ODER ZUR LAGERUNG VON WASSERSTOFF

Title (fr)
STRUCTURE MULTICOUCHE POUR LE TRANSPORT OU LE STOCKAGE DE L'HYDROGENE

Publication
EP 4363210 A1 20240508 (FR)

Application
EP 22743852 A 20220624

Priority

- FR 2106907 A 20210628
- FR 2022051248 W 20220624

Abstract (en)
[origin: CA3221459A1] Disclosed is a multilayer structure for transporting, distributing and storing hydrogen, the structure comprising, from the inside to the outside, at least one sealing layer (1) and at least one composite reinforcing layer (2), the innermost composite reinforcing layer being wound around the outermost adjacent sealing layer (1), the sealing layers consisting of a composition predominantly comprising: at least one semi-crystalline, aliphatic thermoplastic polyamide polymer P1i, i=1 to n, n being the number of sealing layers, the Tf of which, as measured according to ISO 11357-3: 2013, is greater than 200°C, with the exception of one polyether block amide (PEBA), said thermoplastic polyamide polymer being a polyamide having an average number of carbon atoms per nitrogen atom of 7 to 9, up to 30% by weight of impact modifier relative to the total weight of the composition and up to 1.5% by weight of plasticiser relative to the total weight of the composition, the composition being free of nucleating agent, the at least one thermoplastic polyamide polymer of each sealing layer being able to be identical or different, and at least one of the composite reinforcing layers consisting of a fibrous material in the form of continuous fibres impregnated by a composition predominantly comprising at least one polymer P2j, the polyamide polymer layer being the outermost layer and adjacent to the outermost composite reinforcing layer.

IPC 8 full level
B32B 1/00 (2024.01); B32B 3/04 (2006.01); B32B 7/12 (2006.01); B32B 27/08 (2006.01); B32B 27/12 (2006.01); B32B 27/18 (2006.01); B32B 27/22 (2006.01); B32B 27/30 (2006.01); B32B 27/34 (2006.01); B32B 27/38 (2006.01); B32B 27/40 (2006.01); F17C 1/16 (2006.01)

CPC (source: EP KR US)
B32B 1/00 (2013.01 - EP); B32B 3/04 (2013.01 - EP); B32B 7/12 (2013.01 - EP); B32B 17/02 (2013.01 - KR); B32B 17/10724 (2013.01 - KR); B32B 27/08 (2013.01 - EP); B32B 27/12 (2013.01 - EP KR); B32B 27/18 (2013.01 - EP KR); B32B 27/22 (2013.01 - EP KR); B32B 27/304 (2013.01 - EP KR); B32B 27/306 (2013.01 - EP KR); B32B 27/34 (2013.01 - EP KR); B32B 27/38 (2013.01 - EP); B32B 27/40 (2013.01 - EP); F17C 1/16 (2013.01 - US); B32B 2260/021 (2013.01 - EP KR); B32B 2260/046 (2013.01 - KR); B32B 2262/101 (2013.01 - EP KR); B32B 2262/106 (2013.01 - EP KR); B32B 2262/108 (2013.01 - EP); B32B 2307/412 (2013.01 - EP); B32B 2307/56 (2013.01 - EP); B32B 2307/702 (2013.01 - EP); B32B 2307/704 (2013.01 - EP); B32B 2307/7242 (2013.01 - EP KR); B32B 2307/7265 (2013.01 - EP); F17C 2203/012 (2013.01 - US); F17C 2203/0604 (2013.01 - EP KR US); F17C 2203/0619 (2013.01 - EP US); F17C 2203/066 (2013.01 - US); F17C 2203/0673 (2013.01 - US); F17C 2203/0675 (2013.01 - EP KR); F17C 2209/2127 (2013.01 - US); F17C 2209/2145 (2013.01 - US); F17C 2209/232 (2013.01 - US); F17C 2221/012 (2013.01 - US); Y02E 60/32 (2013.01 - EP)

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

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
FR 3124428 A1 20221230; CA 3221459 A1 20230105; CN 117615904 A 20240227; EP 4363210 A1 20240508; JP 2024525320 A 20240712; KR 20240027092 A 20240229; MX 2023014613 A 20240125; US 2024288121 A1 20240829; WO 2023275465 A1 20230105

DOCDB simple family (application)
FR 2106907 A 20210628; CA 3221459 A 20220624; CN 202280046262 A 20220624; EP 22743852 A 20220624; FR 2022051248 W 20220624; JP 2023575842 A 20220624; KR 20247003252 A 20220624; MX 2023014613 A 20220624; US 202218573626 A 20220624