

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 4319974 A1 20240214 (FR)

Application

EP 22719318 A 20220331

Priority

- FR 2103534 A 20210407
- FR 2022050605 W 20220331

Abstract (en)

[origin: WO2022214753A1] The present invention relates to a multilayer structure for transporting, distributing or storing a gas, in particular hydrogen, comprising, from the inside outwards, N composite reinforcement layer(s) which are deposited one on top of the other and consist of a fibrous material in the form of continuous fibres impregnated with a composition mainly comprising at least one semi-crystalline thermoplastic polymer P1, the melting point of which, measured in accordance with ISO 11357-3:2013, is greater than or equal to 150°C, or at least one amorphous thermoplastic polymer, the glass transition temperature of which is greater than 80°C, N being between 1 and 2000 layers, and an outer sealing layer (1) which adheres to the outermost composite reinforcement layer (2) and comprises a composition mainly comprising said at least one thermoplastic polymer P1, said composition of the outer sealing layer (1) being formed from at least the outermost composite reinforcement layer (2) adhering to the sealing layer, said outer sealing layer (1) having a thickness of at least 2 µm, the sum of the thicknesses of each composite reinforcement layer (2) and of the thickness of the sealing layer being equal to the sum of the thicknesses of said N layers prior to their deposition, less any porosities.

IPC 8 full level

B32B 1/08 (2006.01); **B32B 5/02** (2006.01); **B32B 5/12** (2006.01); **B32B 5/14** (2006.01); **B32B 5/26** (2006.01); **B32B 7/027** (2019.01); **B32B 15/08** (2006.01); **B32B 15/085** (2006.01); **B32B 15/088** (2006.01); **B32B 27/12** (2006.01); **B32B 27/18** (2006.01); **B32B 27/28** (2006.01); **B32B 27/30** (2006.01); **B32B 27/32** (2006.01); **B32B 27/34** (2006.01)

CPC (source: EP US)

B32B 1/00 (2013.01 - EP); **B32B 1/08** (2013.01 - EP); **B32B 5/02** (2013.01 - EP); **B32B 5/12** (2013.01 - EP); **B32B 5/145** (2013.01 - EP); **B32B 5/147** (2013.01 - EP); **B32B 5/26** (2013.01 - EP); **B32B 7/027** (2019.01 - EP); **B32B 15/08** (2013.01 - EP); **B32B 15/085** (2013.01 - EP); **B32B 15/088** (2013.01 - EP); **B32B 27/12** (2013.01 - EP); **B32B 27/18** (2013.01 - EP); **B32B 27/281** (2013.01 - EP); **B32B 27/285** (2013.01 - EP); **B32B 27/286** (2013.01 - EP); **B32B 27/288** (2013.01 - EP); **B32B 27/308** (2013.01 - EP); **B32B 27/32** (2013.01 - EP); **B32B 27/322** (2013.01 - EP); **B32B 27/34** (2013.01 - EP); **F16L 9/04** (2013.01 - US); **F16L 9/12** (2013.01 - US); **F17C 1/06** (2013.01 - US); **B32B 2260/023** (2013.01 - EP); **B32B 2260/046** (2013.01 - EP); **B32B 2262/02** (2013.01 - EP); **B32B 2262/06** (2013.01 - EP); **B32B 2262/065** (2013.01 - EP); **B32B 2262/101** (2013.01 - EP); **B32B 2262/106** (2013.01 - EP); **B32B 2262/108** (2013.01 - EP); **B32B 2307/202** (2013.01 - EP); **B32B 2307/304** (2013.01 - EP); **B32B 2307/536** (2013.01 - EP); **B32B 2307/558** (2013.01 - EP); **B32B 2307/702** (2013.01 - EP); **B32B 2307/704** (2013.01 - EP); **B32B 2307/7242** (2013.01 - EP); **B32B 2307/732** (2013.01 - EP); **B32B 2439/00** (2013.01 - EP); **B32B 2439/40** (2013.01 - EP); **F17C 2201/0104** (2013.01 - US); **F17C 2201/0147** (2013.01 - US); **F17C 2203/012** (2013.01 - US); **F17C 2203/0621** (2013.01 - US); **F17C 2203/0624** (2013.01 - US); **F17C 2203/066** (2013.01 - US); **F17C 2203/0673** (2013.01 - US); **F17C 2209/2163** (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)

WO 2022214753 A1 20221013; CN 117396332 A 20240112; EP 4319974 A1 20240214; FR 3121627 A1 20221014; FR 3121627 B1 20231229; US 2024183494 A1 20240606

DOCDB simple family (application)

FR 2022050605 W 20220331; CN 202280037229 A 20220331; EP 22719318 A 20220331; FR 2103534 A 20210407; US 202218285830 A 20220331