

Title (en)
NONWOVEN MATERIALS AND FIBERS INCLUDING STARCH-BASED POLYMERIC MATERIALS

Title (de)
VLIESSTOFFE UND FASERN MIT STÄRKEBASIERTEN POLYMER MATERIALIEN

Title (fr)
MATÉRIAUX NON TISSÉS ET FIBRES COMPRENANT DES MATÉRIAUX POLYMÈRES À BASE D'AMIDON

Publication
EP 4158086 A1 20230405 (EN)

Application
EP 21817367 A 20210601

Priority

- US 202063033676 P 20200602
- US 202117327536 A 20210521
- US 202117327577 A 20210521
- US 202117327590 A 20210521
- US 2021035191 W 20210601

Abstract (en)
[origin: WO2021247530A1] Described are very high molecular weight (e.g., over 2 million, such as 3-20 million g/mol) starch-based materials, and formulations including such, which can be spun in spunbond, melt blown, yarn, or similar processes. Even with such very high molecular weights, the formulations can be processed at commercial line speeds, with spinneret shear viscosities of 1000 sec-1, without onset of melt flow instability. The starch-based material can be blended with one or more thermoplastic materials having higher melt flow index value(s), which serve as a diluent and plasticizer, allowing the very viscous starch-based component to be spun under such conditions. The particular melt flow index characteristics of the thermoplastic diluent material can be selected based on what type of process is being used (e.g., spunbond, melt blown, yarn, etc.). The starch-based material may exhibit high shear sensitivity, strain hardening behavior, and/or very high critical shear stress (e.g., at least 125 kPa).

IPC 8 full level
D01D 5/00 (2006.01); **A24D 3/06** (2006.01); **A61F 2/06** (2006.01); **D01D 5/247** (2006.01); **D01F 1/10** (2006.01)

CPC (source: EP KR US)
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Designated extension state (EPC)
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KH MA MD TN

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