

Title (en)
MANUFACTURING METHOD OF HIGH TENACITY POLYETHYLENE FIBER AND HIGH TENACITY POLYETHYLENE FIBER PREPARED THEREBY

Title (de)
HERSTELLUNGSVERFAHREN FÜR HOCHFESTE POLYETHYLENFASER UND DADURCH HERGESTELLTE HOCHFESTE POLYETHYLENFASER

Title (fr)
PROCÉDÉ DE FABRICATION DE FIBRES DE POLYÉTHYLÈNE À HAUTE TÉNACITÉ ET FIBRES DE POLYÉTHYLÈNE À HAUTE TÉNACITÉ AINSI PRÉPARÉES

Publication
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Application
EP 08753618 A 20080521

Priority
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Abstract (en)
[origin: WO2009119940A1] Disclosed are a method of manufacturing high-tenacity polyethylene fiber and high-tenacity polyethylene fiber manufactured thereby. The method includes mixing polyethylene, having a molecular weight average molecular weight ranging from 200,000 to 5,000,000, with a first solvent, which is a nonvolatile organic compound, thus obtaining a gel solution having an intrinsic viscosity of 17-23 dl/g; spinning the gel solution using a die, thus forming gel fiber; immersing the gel fiber in a second solvent, which is a liquid-phase volatile organic compound, at a high temperature close to the volatile point of the second solvent, and cooling it; and jetting the second solvent, which is a gas-phase volatile organic compound, to the cooled gel fiber, thus extracting the first solvent and drawing the gel fiber at a draw ratio of 30: 1-50: 1. Through this method, high-tenacity polyethylene fiber having superior mechanical properties, including high tenacity and high elongation and excellent chemical resistance, can be manufactured.

IPC 8 full level
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CPC (source: EP KR)
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Citation (search report)
• [X] NL 9301979 A 19950201 - IND TECH RES INST
• [XA] US 2007154707 A1 20070705 - SIMMELINK JOSEPH A P [NL], et al
• [X] WO 2008024732 A2 20080228 - HONEYWELL INT INC [US], et al
• See references of WO 2009119940A1

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