

Title (en)

LIQUID CRYSTAL POLYESTER FIBERS, AND PRODUCTION METHOD THEREFOR

Title (de)

FLÜSSIGKRISTALLPOLYESTERFASERN UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

FIBRES DE POLYESTER À CRISTAUX LIQUIDES, ET PROCÉDÉ DE PRODUCTION ASSOCIÉ

Publication

EP 3101161 A1 20161207 (EN)

Application

EP 15742762 A 20150121

Priority

- JP 2014016586 A 20140131
- JP 2015051451 W 20150121

Abstract (en)

Provided is a liquid crystal polyester fiber having high strength, high elastic modulus, high abrasion resistance, excellent processability, and little thermal deformation at high temperature, and also provided is a production method thereof. A liquid crystal polyester fiber, characterized in that the peak half-value width of the endothermic peak (Tm1) observed when measuring by differential calorimetry under rising temperature conditions starting at 50°C and increasing 20°C/min is 15°C or higher, the polystyrene-converted weight-average molecular weight is between 250,000 and 2,000,000 inclusive, the peak temperature of the loss tangent (tan δ) is between 100°C and 200°C inclusive, and the peak value of the loss tangent (tan δ) is between 0.060 and 0.090 inclusive. A mesh fabric comprising the liquid crystal polyester fiber. A production method for melt liquid crystal polyester fiber, characterized in that liquid crystal polyester fiber obtained by melt-spinning is subject to solid-phase polymerization, and subsequently heat treated at a stretch ratio of at least 0.1% and under 3.0% at a temperature at least 50°C higher than the endothermic peak temperature (Tm1) as observed when measuring by differential calorimetry under rising temperature conditions starting at 50°C and increasing 20°C/min.

IPC 8 full level

D01F 6/62 (2006.01); **D01F 6/84** (2006.01)

CPC (source: EP KR US)

D01D 5/08 (2013.01 - EP); **D01F 6/62** (2013.01 - EP KR US); **D01F 6/84** (2013.01 - EP KR US); **D01D 5/08** (2013.01 - US); **D10B 2331/04** (2013.01 - US); **D10B 2401/046** (2013.01 - KR); **D10B 2401/061** (2013.01 - KR); **D10B 2401/063** (2013.01 - KR)

Cited by

CN106591997A

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

DOCDB simple family (publication)

EP 3101161 A1 20161207; **EP 3101161 A4 20171011**; CN 106414820 A 20170215; JP WO2015115259 A1 20170323; KR 20160110481 A 20160921; TW 201546340 A 20151216; TW I655328 B 20190401; US 2016340804 A1 20161124; US 2019177880 A1 20190613; WO 2015115259 A1 20150806

DOCDB simple family (application)

EP 15742762 A 20150121; CN 201580006626 A 20150121; JP 2015051451 W 20150121; JP 2015505749 A 20150121; KR 20167022402 A 20150121; TW 104103126 A 20150130; US 201515113902 A 20150121; US 201916275399 A 20190214