

Title (en)

FIRE RETARDANT COMPOSITIONS AND METHODS AND APPARATUSES FOR MAKING THE SAME

Title (de)

FEUERHEMMENDE ZUSAMMENSETZUNGEN UND VERFAHREN UND VORRICHTUNGEN ZU DEREN HERSTELLUNG

Title (fr)

COMPOSITIONS IGNIFUGES ET PROCEDES ET APPAREILS DE PREPARATION AFFERENTS

Publication

**EP 1963039 A4 20150429 (EN)**

Application

**EP 06846310 A 20061115**

Priority

- US 2006060921 W 20061115
- US 28210805 A 20051116
- US 66068106 A 20061115

Abstract (en)

[origin: CA2670051A1] A method for forming yarn provides for forming an intermediate product by stretching and breaking filaments of a ribbon like tow starting material of longitudinally aligned filaments. The intermediate product may be wool-like with wavy and randomly oriented fibers formed by from the fragmented filaments. The single drafting operation includes directing the tow through first and second pairs of rollers, the second pair rotating faster than the first. The intermediate product may be spun directly into yarn in one spinning/twisting operation. The fire retardant and heat resistant yarn so produced may include 100% oxidized polyacrylonitrile fibers having an average length greater than about 15 cm. The yarn may be knitted or otherwise formed into fire-retardant and heat resistant fabrics or other products used in various applications.

IPC 8 full level

**B23B 27/04** (2006.01); **D01G 1/08** (2006.01); **D02G 3/44** (2006.01); **D03D 15/00** (2006.01)

CPC (source: EP)

**D01G 1/08** (2013.01); **D02G 3/443** (2013.01); **D10B 2321/10** (2013.01)

Citation (search report)

- [XI] GB 2066305 A 19810708 - TOHO BESLON LTD
- [XI] FR 2322223 A1 19770325 - MORGANITE MODMOR LTD [GB]
- [XI] WO 2005054554 A1 20050616 - KUREHA CHEMICAL IND CO LTD [JP], et al
- [XI] US 2003209428 A1 20031113 - HIRAHARA SATOSHI [JP], et al
- [I] US 3533743 A 19701013 - PRESCOTT ROGER, et al
- [X] US 6477740 B1 20021112 - HANSEN NIEL W [US]
- [XI] WO 0077283 A2 20001221 - DU PONT [US], et al
- See references of WO 2007059510A2

Citation (examination)

- EP 1205587 A2 20020515 - RIETER AG MASCHF [CH]
- US 4583266 A 19860422 - TANGO YASUO [JP], et al
- US 2096795 A 19371026 - HENRY DREYFUS
- JP S5580526 A 19800617 - TORAY INDUSTRIES

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

CA 2670051 A1 20070524; CA 2670051 C 20150526; EP 1963039 A2 20080903; EP 1963039 A4 20150429

DOCDB simple family (application)

CA 2670051 A 20061115; EP 06846310 A 20061115