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(54) Fire retardant and heat resistant yarns and fabrics treated for increased strength and liquid shedding

(57) Fire retardant and heat resistant yarns and fabrics include an inner core comprised of oxidized polyacrylonitrile encapsulated by an outer shell comprised of a liquid-resistant and strengthening polymer material. The liquid-resistant and strengthening polymer material includes one or more types of cured silicone polymer resin. A fluorochemical may be at least partially impregnated into the inner core prior to applying the liquid-resistant and strengthening polymer material in order to further enhance the liquid shedding properties of the yarns or fabric. Because the silicone polymer resin only encapsulates the yarn, but does not form a continuous coating over the whole fabric, the treated fabric is still able to breath through pores and spaces between individual yarn strands that make up the fabric. The liquid-resistant and strengthening polymer material increases the strength, abrasion resistance, durability and liquid and gel shedding capability of the fire retardant heat resistant yarn or fabric.

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EUROPEAN SEARCH REPORT

Application Number
EP 07 00 6546

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
D,Y	US 2004/091705 A1 (HANYON WILLIAM J [US] ET AL) 13 May 2004 (2004-05-13) * page 1, paragraph 9 - paragraph 11 * * page 4, paragraph 57 - paragraph 58 * * page 5, paragraph 69 - paragraph 71 * * page 6, paragraph 81 * * page 7, paragraph 90 - paragraph 91 * * page 9 - page 10; examples 1-4 * * page 10 - page 12; claims 1,33,41 * -----	1-21	INV. D06M15/277 D06M15/643
D,Y	US 5 004 643 A (CALDWELL J MICHAEL [US]) 2 April 1991 (1991-04-02) * column 3, line 62 - column 4, line 27 * * column 4, line 47 - line 57 * * column 10, line 41 - line 68 * * column 44, line 56 - column 49, line 21; examples 1-23 * -----	1-21	

TECHNICAL FIELDS SEARCHED (IPC)
D06M
D02G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	2 February 2009	Menard, Claire

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 07 00 6546

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02-02-2009

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82