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(71) Applicant (for AE, AG, AU, BB, BZ, CA, CY, GB, GD, GH, GM, IE, IL, KE, LC, LK, LS, MN, MW, NZ, SD, SG, SL, SZ, TT, TZ, UG, ZA, ZW only): **UNILEVER PLC** [GB/GB];
Unilever House, Blackfriars, London EC4P 4BQ (GB).

(71) Applicant (for AL, AM, AT, AZ, BA, BE, BF, BG, BJ, BR, BY, CF, CG, CH, CI, CM, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, FR, GA, GE, GN, GR, GW, HR, HU, ID, IS, IT, JP, KG, KP, KR, KZ, LR, LT, LU, LV, MA, MC, MD, MG, MK, ML, MR, MX, MZ, NE, NL, NO, PL, PT, RO, RU, SE, SI, SK, SN, TD, TG, TJ, TM, TR, UA, UZ, VN, YU only): **UNILEVER NV** [NL/NL]; Weena 455, NL-3013 AL Rotterdam (NL).

(71) Applicant (for IN only): **HINDUSTAN LEVER LIMITED** [IN/IN]; Hindustan Lever House, 165/166 Backbay Reclamation, Maharashtra, Mumbai 400 020 (IN).

(72) Inventors: **BABU, Gangundi, Prakash**; Hindustan Lever Ltd, Research Centre, Chakala, Andheri (East), Mumbai 400 099 (IN). **DHANUKA, Vinodkumar, Ramniran**; Hindustan Lever Ltd, Research Centre, Chakala, Andheri (East), Mumbai 400 099 (IN). **DIVECHA, Kaushik**,

Narotam; Hindustan Lever Ltd, Research Centre, Chakala, Andheri (East), Mumbai 400 099 (IN). **KESWANI, Manish, Hardas**; K.L. Kulkarni, Plot Number 4, Suprabha Building, Behind Hanuman Temple, Ganesh Colony, Jalgaon Maharashtra (IN). **RAJAN, Raghavachari**; Hindustan Lever Ltd, Research Centre, 64 Main Road, Whitefield P.O., Bangalore 560 066 (IN).

(74) Agents: **FRANELLA, Mary, Evelyn** et al.; Unilever PLC, Patent Department, Colworth House, Sharnbrook, Bedford, Bedfordshire MK44 1LQ (GB).

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(54) Title: TEXTILE TREATMENT PROCESS AND PRODUCT

(57) Abstract: A process for treating a yarn and/or a fabric to form fine inorganic particulate material in the intra-yarn pores and/or on the surface of the fibres constituting the yarn or fabric, which would substantially maintain fabric reflectance after repeated wash/wear cycles without affecting the desired characteristics of air permeability. The inorganic particles are preferably formed by reacting in an aqueous medium a first reagent selected from mineral and organic acids and a second reagent selected from alkali or alkaline earth metal salts with inorganic anions. The invention also relates to a treatment product composition directed to provide instant inorganic deposits in the yarn or fibre surface.

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 D06M11/79 D06M11/45 D06M11/11 D06M11/76 D06M11/38 D06M11/70 D06M11/71 D06M11/55 D06M11/64 D06M11/65					
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched					
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C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category °	Citation of document, with indication, where appropriate, of the relevant passages				Relevant to claim No.
X	EP 0 643 166 A (OJI PAPER CO) 15 March 1995 (1995-03-15) page 3, line 20 - line 34 page 4, line 43 - line 58 examples ---				1-3,5-8, 10-17
X	CH 418 815 A (THALER HERMANN JOSEF DR) 15 August 1966 (1966-08-15) page 3, line 89 - line 101 ---				1-3,5-8, 12-17
X	US 1 808 068 A (ROBERT RAFTON HAROLD) 2 June 1931 (1931-06-02) page 3, line 24 - line 36 --- -/--				1-3,5-8, 12-17
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016			Authorized officer Fiocco, M		

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PCI/EP 01/07562

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 097 589 A (HENRY DREYFUS) 2 November 1937 (1937-11-02) page 1, column 1, line 1 - line 26 page 1, column 2, line 4 - line 18 example 3 ---	1,5-7, 10-12, 14,16,17
X	WO 94 08086 A (UNIV WASHINGTON) 14 April 1994 (1994-04-14) page 3, line 24 -page 4, line 14 page 7, line 10 - line 21; table 1 examples 6,10 -----	1,5-8, 12,14, 16,17

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCI/EP 01/07562

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0643166	A	15-03-1995	JP 4024299 A	28-01-1992
			JP 4057964 A	25-02-1992
			EP 0643166 A2	15-03-1995
			DE 69125050 D1	17-04-1997
			DE 69125050 T2	16-10-1997
			DE 69131108 D1	12-05-1999
			DE 69131108 T2	25-11-1999
			EP 0457235 A1	21-11-1991
			US 5122230 A	16-06-1992
			US 5158646 A	27-10-1992
CH 418815	A	15-08-1966	BE 596514 A	
			FR 1274811 A	27-10-1961
			LU 39352 A1	29-12-1960
			NL 257174 A	
US 1808068	A	02-06-1931	NONE	
US 2097589	A	02-11-1937	GB 445182 A	30-03-1936
WO 9408086	A	14-04-1994	US 5275699 A	04-01-1994
			AU 5327694 A	26-04-1994
			BR 9307351 A	01-06-1999
			CA 2145519 A1	14-04-1994
			EP 0663970 A1	26-07-1995
			FI 951654 A	06-04-1995
			JP 8502328 T	12-03-1996
			NO 951292 A	04-04-1995
			WO 9408086 A1	14-04-1994