

Title (en)  
METHOD FOR DYEING NYLON FILAMENTS

Publication  
**EP 0591361 A4 19940518 (EN)**

Application  
**EP 92913760 A 19920602**

Priority  
• US 9204589 W 19920602  
• US 71619691 A 19910617

Abstract (en)  
[origin: WO9222699A1] A method for dyeing nylon filaments for use in wear-indicating toothbrushes includes immersing a batch of a first nylon filament for between 10 minutes and 80 minutes in an aqueous solution containing between 0.01 % and 0.19 % weight to volume of Indigotine dye, said solution having a pH between 1 and 7 and having a temperature between 50 DEG C and 90 DEG C, the dye penetrating into the filament to color an outer cross-sectional region and not penetrating into an inner cross-sectional region of the filament; removing the batch of the first nylon filament from the solution, and repeating the steps for a batch of a second nylon filament, reusing the same solution.

IPC 1-7  
**D06P 1/40**

IPC 8 full level  
**A46D 1/04** (2006.01); **D06P 1/00** (2006.01); **D06P 3/00** (2006.01); **D06P 3/24** (2006.01)

CPC (source: EP)  
**A46B 15/001** (2013.01); **A46D 1/04** (2013.01); **D06P 1/002** (2013.01); **D06P 3/241** (2013.01)

Citation (search report)  
• [DX] US 4802255 A 19890207 - BREUER MIKLOS M [US], et al  
• [X] CHEMICAL ABSTRACTS, vol. 104, no. 18, 5 May 1986, Columbus, Ohio, US; abstract no. 150660v, BARYBINA, L. A. ET AL: "Multiple use of residual dye solutions" & TEKST. PROM-ST. (MOSCOW), (12), 55, 1985  
• See references of WO 9222699A1

Designated contracting state (EPC)  
AT BE CH DE DK ES FR GB GR IT LI LU MC NL

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**WO 9222699 A1 19921223**; AU 2186292 A 19930112; AU 663099 B2 19950928; BR 9206016 A 19940802; CA 2109935 C 20000125; CN 1051118 C 20000405; CN 1067936 A 19930113; DE 69216234 D1 19970206; DE 69216234 T2 19970605; EP 0591361 A1 19940413; EP 0591361 A4 19940518; EP 0591361 B1 19961227; JP 2831465 B2 19981202; JP H06503860 A 19940428; KR 100205843 B1 19990701; MX 9202915 A 19930101; SG 48428 A1 19980417; ZA 923986 B 19930224

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