

Title (en)  
COLORING MEDIA HAVING IMPROVED BRIGHTNESS AND COLOR CHARACTERISTICS

Title (de)  
FARBMEDIEN MIT VERBESSERTE FARB- UND HELBIGKEITS EIGENSCHAFTEN

Title (fr)  
MILIEUX DE COLORATION PRESENTANT DES PROPRIETES D'ECLAT ET DE COLORATION AMELIOREES

Publication  
**EP 0994775 A4 20030402 (EN)**

Application  
**EP 98934370 A 19980708**

Priority  

- US 9814264 W 19980708
- US 89032097 A 19970709
- US 89187797 A 19970709
- US 89865897 A 19970722

Abstract (en)  
[origin: WO9902340A1] Disclosed are novel reflective microflakes for use in making "additive-primary" coloring media having improved reflection characteristics over the red, green and blue super bright color characteristics, and "super-white" coloring media having Magnesium Oxide like color characteristics. The coloring media of the present invention provides a palette of colors for imparting color characteristics or forming color images upon surfaces of arbitrary surface geometry. In one embodiment, the microflakes are made from cholesteric liquid crystal (CLC) material, wherein the pitch of the helices of the liquid crystal molecules in each CLC microflake varies along the thickness dimension thereof. Depending on the final spiral structure of the materials utilized, the CLC circularly polarizing materials reflect either left-handed or right-handed circularly polarized light. Further, each CLC microflake of additive coloring media has a laminated construction on order that both the upper and lower surfaces thereof have substantially the same reflection characteristics over its tuned reflection band.

IPC 1-7  
**B32B 27/04**; **B32B 33/00**; **C09D 11/12**; **C09D 13/00**; **C09K 19/00**; **C09K 19/52**; **G02F 1/00**; **G02B 27/22**; **G03G 13/00**; **G02B 5/30**; **C09D 5/36**

IPC 8 full level  
**B41J 2/01** (2006.01); **C09D 5/36** (2006.01); **C09D 7/12** (2006.01); **C09D 11/12** (2006.01); **C09D 13/00** (2006.01); **C09D 17/00** (2006.01); **C09D 201/00** (2006.01); **C09K 19/00** (2006.01); **G02B 5/20** (2006.01); **G02B 5/30** (2006.01); **G02B 27/22** (2006.01); **G02F 1/00** (2006.01); **G03G 9/09** (2006.01)

CPC (source: EP KR)  
**B32B 27/04** (2013.01 - KR); **B82Y 15/00** (2013.01 - EP); **C09D 5/36** (2013.01 - EP); **C09D 13/00** (2013.01 - EP); **C09K 19/00** (2013.01 - EP); **G02B 5/3016** (2013.01 - EP)

Citation (search report)  

- [X] GB 2276883 A 19941012 - CENTRAL RESEARCH LAB LTD [GB]
- [DA] US 5364557 A 19941115 - FARIS SADES M [US]
- [A] US 5457554 A 19951010 - FARIS SADEG M [US]
- See references of WO 9902340A1

Cited by  
CN110618483A; US10030961B2; US11774656B2

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

DOCDB simple family (publication)  
**WO 9902340 A1 19990121**; AU 8390898 A 19990208; EP 0994775 A1 20000426; EP 0994775 A4 20030402; JP 2001509520 A 20010724; KR 20010021704 A 20010315

DOCDB simple family (application)  
**US 9814264 W 19980708**; AU 8390898 A 19980708; EP 98934370 A 19980708; JP 2000501897 A 19980708; KR 20007000263 A 20000110