



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(51) International Patent Classification <sup>6</sup> :<br/> <b>C07C 67/08, 69/003, 69/013, 69/02, 69/025, 69/03, 69/34, 69/347, 69/36, 69/40, 69/42, 69/44, 69/48, 69/50, 69/52, 69/527, 69/60, 69/675, C08G 18/42, 18/68, 18/79, 18/80</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>A1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>(11) International Publication Number: <b>WO 00/17148</b></p> <p>(43) International Publication Date: <b>30 March 2000 (30.03.00)</b></p> |
| <p>(21) International Application Number: <b>PCT/US99/20654</b></p> <p>(22) International Filing Date: <b>9 September 1999 (09.09.99)</b></p> <p>(30) Priority Data:<br/> <b>09/156,254                      18 September 1998 (18.09.98)    US</b></p> <p>(71) Applicant: <b>McWHORTER TECHNOLOGIES, INC. {US/US};<br/> 400 East Cottage Place, Carpentersville, IL 60110 (US).</b></p> <p>(72) Inventors: <b>PANANDIKER, Kamlesh, P.; 19425 Vineridge Road, Excelsior, MN 55331 (US). BRONK, John, Michael; 763 St. Johns Road, Woodstock, IL 60098 (US). SPITLER, Franklin, Paul; 220 Beach Drive, Algonquin, IL 60102 (US).</b></p> <p>(74) Agents: <b>SAMPLES, Kenneth, H. et al.; Fitch, Even, Tabin &amp; Flannery, Room 1600, 120 South LaSalle, Chicago, IL 60603 (US).</b></p> | <p>(81) Designated States: <b>AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</b></p> <p><b>Published</b><br/> <i>With international search report.</i></p> |                                                                                                                                              |
| <p>(54) Title: <b>POWDER COATINGS BASED ON BRANCHED OLIGOESTERS AND NON-EMISSIVE URETDIONE POLYISOCYANATES</b></p> <p>(57) Abstract</p> <p>The present invention relates to powder coating compositions which can be cured at low temperatures. The powder coating composition of the invention includes a unique combination of a branched oligoester polyol and uretdione cross-linking agent which when cured results in a coating binder with desirable hardness, flexibility, solvent resistance, corrosion resistance, weatherability and gloss.</p>                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                              |