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| <b>(51) International Patent Classification <sup>6</sup> :</b><br>C08F 8/30, 283/04, C08G 69/48, C08K 3/04, C08L 23/00, 47/00, 77/00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 96/10046</b><br><b>(43) International Publication Date:</b> 4 April 1996 (04.04.96)                                                                                                                                 |
| <b>(21) International Application Number:</b> PCT/US95/05230<br><b>(22) International Filing Date:</b> 24 May 1995 (24.05.95)<br><b>(30) Priority Data:</b><br>08/312,470 26 September 1994 (26.09.94) US<br><b>(71) Applicant:</b> EMPAK, INC. [US/US]; 950 Lake Drive, Chanhassen, MN 55317 (US).<br><b>(72) Inventors:</b> MASSENGALE, Brian; 3890 Mariposa, Colorado Springs, CO 80907 (US). SCHAUER, Paul; 2640 Hanover-town Drive, Colorado Springs, CO 80907 (US). DAHLE, Charles; 150 Crestwood Drive, Woodland Park, CO 80863 (US). GREGERSON, Barry; 386 Cobblestone Drive, Colorado Springs, CO 80906 (US). BACHMAN, Bonnie; 9627 Mountain Ridge Place, Boulder, CO 80302 (US). OESTERLE, Thomas; 2055 Heathercrest Drive, Colorado Springs, CO 80915 (US).<br><b>(74) Agent:</b> HAUGEN AND NIKOLAI, P.A.; 820 International Centre, 900 Second Avenue South, Minneapolis, MN 55402-3325 (US). |           | <b>(81) Designated States:</b> CN, JP, KR, <b>(SG)</b> European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).<br><br><b>Published</b><br>With international search report.<br><br>SG 9700769-4<br><br>RTMPS copy<br>copy of<br>HER + annexes |
| <b>(54) Title:</b> MILLED CARBON FIBER REINFORCED POLYMER COMPOSITION<br><br><b>(57) Abstract</b><br><br>A milled carbon fiber reinforced polymer having increased abrasion resistive characteristics. The reinforced polymer comprises a base resin selected from the group consisting of polyolefins and polyamides. The base resin is combined with an amount of milled carbon fibers and further may be combined with polytetrafluoroethylene. The resulting composite materials have excellent friction and wear characteristics and are useful in the production of injection molded parts. The molded parts have a high impact strength, exhibit dimensional stability, are abrasion resistive, and are static dissipative, with the composite materials having particular utility as support fixtures for semiconductors during certain processing operations.                                     |           |                                                                                                                                                                                                                                                                         |