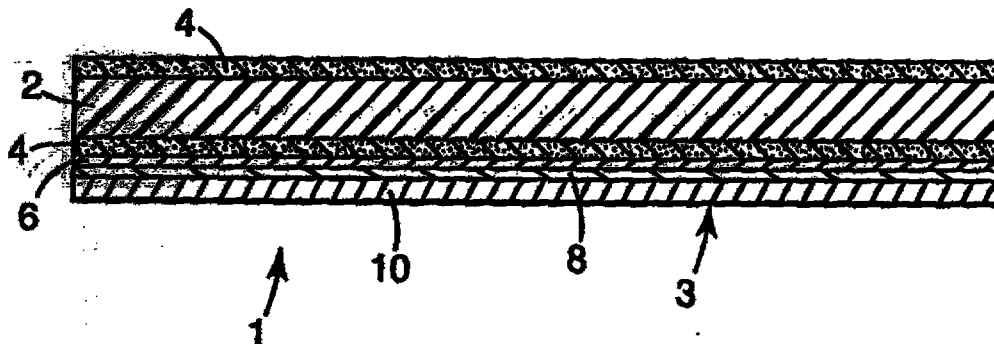




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H05K 3/28, 3/38	A1	(11) International Publication Number: WO 99/12404 (43) International Publication Date: 11 March 1999 (11.03.99)
(21) International Application Number: PCT/US98/15270 (22) International Filing Date: 20 July 1998 (20.07.98) (30) Priority Data: 08/919,883 28 August 1997 (28.08.97) US (71) Applicant: MINNESOTA MINING AND MANUFACTURING COMPANY [US/US]; 3M Center, P.O. Box 33427, Saint Paul, MN 55133-3427 (US). (72) Inventors: YANG, Rui; 6801 River Place Boulevard, Austin, TX 78726-9000 (US). TRUONG, Thach, G.; 20 Springside Avenue, Singapore 787001 (SG). MOONEY, Justine, A.; 6801 River Place Boulevard, Austin, TX 78726-9000 (US). DAVID, Moses, M.; P.O. Box 33427, Saint Paul, MN 55133-3427 (US). (74) Agents: FONSECA, Darla, P. et al.; Minnesota Mining and Manufacturing Company, Office of Intellectual Property Counsel, P.O. Box 33427, Saint Paul, MN 55133-3427 (US).		(81) Designated States: CA, CN, JP, KR, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report.

(54) Title: FLEXIBLE CIRCUITS AND CARRIERS AND PROCESS FOR MANUFACTURE



(57) Abstract

A flexible circuit carrier (1) including at least one layer of polymer dielectric material (2), at least one layer of conductive material (3) thereover, each layer having two major surfaces, at least one of said layers having at least one aperture therein, wherein at least one layer has a material (4) coated on at least a portion thereof having a Young's Modulus of from 100 to 200 GPa, a dielectric constant (between 45 MHz and 20 GHz) of from 8 to 12, and a Vickers hardness of from 2000 to 9000 kg/mm² namely diamond-like carbon.