

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/113427 A3

(51) International Patent Classification⁷: **C08J 9/26**,
C08G 59/14

(21) International Application Number:
PCT/US2004/015772

(22) International Filing Date: 20 May 2004 (20.05.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/456,127 6 June 2003 (06.06.2003) US

(71) Applicants: **DOW GLOBAL TECHNOLOGIES INC.**
[US/US]; Washington Street, 1790 Building, Midland, MI
48674 (US). **VALETTE, Ludovic** [FR/FR]; 8, rue du Bre-
zouard, F-67116 Reichstett (FR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MARESIN, Cather-
ine** [FR/FR]; 15, Route de Vienne, F-69007 Lyon (FR).
MERCIER, Regis [FR/FR]; 17, Rue Joannes Gazague,
69540 Irigny (FR).

(74) Agent: **PRIETO, Joe, R.**; The Dow Chemical Company,
Intellectual Property, P.O. Box 1967, Midland, MI 48641-
1967 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, 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, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
28 April 2005

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: NANOPOROUS LAMINATES

(57) Abstract: A process of making a nanoporous substrate, such as the matrix in an electrical laminate, by grafting onto an organic resin backbone a thermolabile Rinctionality by reacting hydrogen active groups of the organic resin with a compound containing thermolabile groups; then thermally degrading the thermolabile groups grafted on the organic resin to form a nanoporous laminate. Advantageously, the nanoporous electrical laminate has a low dielectric constant (Dk) because of the nanopores present in the lami-
nate matrix.

