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(21) International Application Number: PCT/US97/02668 (22) International Filing Date: 21 February 1997 (21.02.97) (30) Priority Data: 08/612,643 / 8 March 1996 (08.03.96) / US (71) Applicant: THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). (72) Inventors: SHIVELY, Thomas, Michael; 2181 Ireton-Trees Road, Moscow, OH 45153-9771 (US). DES MARAIS, Thomas, Allen; 10204 Scull Road, Cincinnati, OH 45252 (US). DYER, John, Collins; 3760 Sherbrooke Drive, Cincinnati, OH 45241 (US). STONE, Keith, Joseph; 1923 Augusta Boulevard, Fairfield, OH 45014 (US). (74) Agents: REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, 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, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: HETEROGENEOUS FOAM MATERIALS (57) Abstract The present invention relates to a HIPE-derived heterogeneous polymeric foam structure of interconnected open-cells, wherein the foam structure has at least two distinct regions. Such heterogeneous foams have various applications, such as energy and fluid absorption, insulation, and filtration. The invention further relates to a heterogeneous absorbent polymeric foam that, upon contact with aqueous fluids (in particular body fluids such as urine and blood), can acquire, distribute, and store these fluids. The foams of the invention have at least two distinct regions having different density, polymer composition, surface properties, and/or microcellular morphology. The invention further relates to a process for obtaining the heterogeneous foams by polymerizing a high internal phase water-in-oil emulsion, or HIPE. In one aspect, the process utilizes at least two distinct HIPEs, with each emulsion having a relatively small amount of an oil phase and a relatively greater amount of a water phase.		