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(21) International Application Number: PCT/EP99/01005 (22) International Filing Date: 16 February 1999 (16.02.99) (30) Priority Data: 98200513.4 18 February 1998 (18.02.98) EP (71) Applicant (for all designated States except US): SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V. [NL/NL]; Carel van Bylandtlaan 30, NL-2596 HR The Hague (NL). (72) Inventors; and (75) Inventors/Applicants (for US only): VAN GIEZEN, Joseph, Cornelis [NL/NL]; Badhuisweg 3, NL-1031 CM Am- sterdam (NL). LANGE, Jean-Paul [BE/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL). MESTERS, Carolus, Matthias, Anna, Maria [NL/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, 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, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, 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). Published With international search report.
(54) Title: PROCESS FOR THE PREPARATION OF STYRENES (57) Abstract Process for the preparation of styrene or substituted styrenes comprising the gas phase dehydration of 1-phenyl ethanol or substituted 1-phenyl ethanol in the presence of a solid acidic catalyst comprising a zeolite and a binder material, wherein the weight ratio of zeolite to binder is in the range of from 1:99 to 90:10 and wherein the following relation applies: $0 < K < 5$ with: $K = V/S * [(Pz * fz) + (Pb * fb)]^{1/2}$, wherein: V/S is the volume/surface ratio of the catalyst used in mm; fz is the weight fraction of zeolite present in the catalyst in grams zeolite per gram catalyst; fb is the weight fraction of binder present in the catalyst in grams binder per gram catalyst; Pz is the intrinsic productivity of zeolite expressed as grams styrene produced per gram of the zeolite per hour, as measured for pure zeolite samples of small particle size (i.e. < 0.1mm) at the temperature applied in gas phase dehydration and at a conversion of 1-phenyl ethanol into styrene below 80 %; and Pb is the intrinsic productivity of the binder expressed as grams styrene produced per gram of binder per hour, as measured for pure binder samples of small particle size (i.e. < 0.1mm) under the same conditions as used for determining Pz.		