



(51) International Patent Classification:

C08F 2/26 (2006.01) *C09D 5/02* (2006.01)
C08F 2/38 (2006.01) *C09D 151/00* (2006.01)
C08F 265/06 (2006.01)

(21) International Application Number:

PCT/EP2012/056522

(22) International Filing Date:

11 April 2012 (11.04.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

11161907.8 11 April 2011 (11.04.2011) EP

(71) **Applicant** (for all designated States except US): **NUPLEX RESINS B.V.** [NL/NL]; Synthesebaan 1, NL-4612 RB Bergen Op Zoom (NL).

(72) **Inventors; and**

(75) **Inventors/Applicants** (for US only): **MESTACH, Dirk Emiel Paula** [BE/BE]; Elsendonkstraat 79, B-2560 Nijlen (BE). **HEUTS, Mart** [NL/NL]; Kerkweg 91, NL-6105 CD Maria Hoop (NL). **ADOLPHS, Rob** [NL/NL]; Heining 10, NL-4854 ML Bavel (NL).

(74) **Agents:** **DERKS, Wilhelmus** et al.; Rembrandt Tower, 31st floor, Amstelplein 1, NL-1096 HA Amsterdam (NL).

(81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

— with international search report (Art. 21(3))

(54) **Title:** PROCESS FOR PREPARING AQUEOUS VINYL POLYMER DISPERSIONS

(57) **Abstract:** The invention relates to a process for the preparation of aqueous vinyl polymer dispersions having good film forming properties, good stability and in can clarity, to the polymer dispersions obtainable by the process and coating compositions prepared from said polymer dispersions and the use thereof. The process comprising, (1) a first polymerisation step comprising (1a) preparing an emulsion (1A) in water of a first monomer mixture (1a1) comprising carboxylic acid functional monomers, a surfactant (1a2) and water soluble inorganic salt (1a3) wherein surfactant (1a2) is a sulfur based anionic surfactant containing less than 60 wt% ethylene oxide and wherein the salt (1a3) content at the start of polymerization (1b) is between 0.01 and 3 gr/kg water, (1b) emulsion polymerizing the obtained emulsion 1A forming a hydroplasticisable first stage polymer particle dispersion (1B) said first stage polymer having a Tg from 10 to 125°, (2) a second polymerization step comprising (2a) adding to dispersion 1B a second monomer mixture (2a1) wherein carboxylic acid functional monomers is present in an amount such that the acid value of the resulting polymer is less than 23 KOH/g and wherein the amount of monomer mixture (2a1) is between 10 and 90 wt% of the total weight of monomers (1a1) plus (2a1), (2b) polymerizing second monomer mixture (2a1) to form a second stage polymer in the first particle dispersion (1B) to form a multiphase particle dispersion (2B).

