

Title (en)
HYDROXY ESTER PRE-EXTENDED EPOXY-TERMINATED VISCOSIFIERS AND METHOD FOR PRODUCING THE SAME

Title (de)
HYDROXYESTER-VORVERLÄNGERTE EPOXIDGRUPPEN TERMINIERTE ZÄHIGKEITSVERBESSERER UND VERFAHREN ZU DEREN HERSTELLUNG

Title (fr)
AMÉLIORANTS DE VISCOSITÉ TERMINÉS PAR DES GROUPES ÉPOXYDES, PRÉ-ALLONGÉS PAR DES HYDROXYESTERS ET PROCÉDÉ DE FABRICATION DE CEUX-CI

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Application
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Abstract (en)
[origin: EP1935914A1] New epoxy-terminated polymers (I), carboxy-terminated polymers (II), amino-terminated polymers (XI) and (meth)acrylate-terminated polymers (XII) are based on carboxy-terminated butadiene-acrylonitrile copolymers (CTBN) and polyepoxides (PEP). Epoxy-terminated polymers of formula (I), carboxy-terminated polymers of formula $R_2-(C(OH)(Y_2)-CH(R_2)-O-CO-R_1-COOH)_n$ (II), amino-terminated polymers of formula $R_2-(C(OH)(Y_2)-CH(R_2)-O-CO-R_1-CO-NH-L)_n$ (XI) and (meth)acrylate-terminated polymers of formula $R_2-(C(OH)(Y_2)-CH(R_2)-O-CO-R_1-CO-O-M)_n$ (XII) are new. R_1 :divalent residue of a carboxy-terminated butadiene-acrylonitrile copolymer (CTBN), minus the terminal carboxy groups; R_2 :residue of a polyepoxide (PEP), minus n epoxy groups; $R_2\sim$: H or group bonded to R_2 ; R_3 :residue of a diglycidyl ether (DGE), minus two glycidyl ether groups; Y_1 , Y_2 :H or Me; n : 2-4 (especially 2); L : 3-(piperazino)-propyl, 5-amino-4-methylbutyl or 2-aminocyclohexyl; M : -CH₂CH(OH)CH₂-O-CO-C(R_7)=CH₂ or - R_8 -O-CO-C(R_7)=CH₂; R_7 :H or Me; R_8 :divalent residue, preferably alkylene, cycloalkylene or (poly)oxyalkylene. Independent claims are included for: (1) the preparation of (I) and (II); (2) the preparation of functionally terminated polymers of formula $R_2-(C(OH)(Y_2)-CH(R_2)-O-CO-R_1-Q-R_{10}-Q)_n$ (XVI), by: (a) preextending a polyepoxide component (PEP) by reaction with an excess of a carboxy-terminated butadiene-acrylonitrile copolymer component (CTBN) of formula $R_1-(COOH)_2$, at a stoichiometric ratio of carboxy groups to epoxy groups of 2 or more, to give (II); and (b) terminating (II) by reacting with a diglycidyl ether, diamine, (meth)acrylate-functional alcohol or glycidyl ether-functional (meth)acrylate, in a stoichiometric ratio of one functional terminal group of the other reactant per COOH group of (II); (3) compositions containing (I) or (II), preferably together with epoxy resin(s) and optionally also high temperature-activated hardener(s) for the resins; and (4) the (I)- or (II)-containing compositions in hardened form. R_{10} :divalent group; Q : NH; and Q_1 :NH₂ or piperazino; Q : O or -OCH₂C(OH)(Y_1)CH₂O-; and Q_1 :O-CO-C(R_7)=CH₂; or Q : -OCH₂C(OH)(Y_1)CH₂O-; and Q_1 :2-(Y_1)-oxiran-2-ylmethoxy. [Image].

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