Title (en)

EPOXY RESIN-AMINE ADDITION PRODUCTS FOR USE AS EMULSIFIERS FOR EPOXY RESINS; AQUEOUS BASED EPOXY RESIN DISPERSIONS AND PROCESS FOR PRODUCING THE SAME

Title (de)

EPOXID-AMIN-ADDUKTE ZUR VERWENDUNG ALS EMULGATOREN FÜR EPOXIDHARZE; EPOXIDHARZDISPERSIONEN AUF WÄSSRIGER BASIS UND VERFAHREN ZU IHRER HERSTELLUNG

Title (fr)

PRODUITS D'ADDITION D'EPOXYDE ET D'AMINE UTILES COMME EMULSIFIANTS DE RESINES EPOXYDES; DISPERSIONS DE RESINE EPOXYDE A BASE AQUEUSE ET LEUR PROCEDE DE PREPARATION

Publication

EP 0883638 A1 19981216 (DE)

Application

EP 97951203 A 19971114

Priority

- DE 19647945 A 19961120
- EP 9706364 W 19971114

Abstract (en)

[origin: DE19751143A1] Epoxide-amine adducts comprise: (A) an epoxide-amine adduct(s) formed from an epoxide compound(s) based on aromatic or cycloaliphatic alcohol and/or novolacs of epoxide functionality > 1 and up to 4 and average epoxide equivalent wt. 70-1000 g/eq with an amino group terminated polyalkylene glycol(s) optionally mixed with determinated polyalkylene glycols of average amine functionality 0.5-1.5, average mol. wt. 700-5000, ethylene oxide content at least 60 wt.% and ratio of polyalkylene glycol(s) to polyepoxide(s) of 0.01:1-0.9:1; and (B) an epoxide-amine adduct(s) formed from an epoxide compound(s) based on polyfunctional aliphatic alcohol(s)of epoxide functionality > 1 and up to 4 and average epoxide equivalent wt. 70-6000 g/eq with an amino group terminated polyalkylene glycol(s) of average amine functionality 0.5-1.5, average mol. wt. 700-5000, ethylene oxide content at least 60 wt.% and ratio of polyalkylene glycol(s) to polyepoxide(s) of 0.01:1-0.9:1. The ratio of (A):(B) is 5:95-95:5. Also claimed are: (i) the preparation of the above adducts by reacting amine terminated polyalkylene glycol(s) with polyepoxide(s) at 70-180 deg C under N2 optionally in the presence of an epoxide-amine accelerator to give an amine hydrogen equivalent of at least 50%; (ii) curable, aq., solvent-free or solvent-poor epoxide resin dispersions comprising the above adduct, epoxide resin, in the form of polyglycidyl ethers based on aromatic or cycloaliphatic alcohol and novolacs of epoxide functionality > 1 and up to 3.5 and average epoxide equivalent wt. 70-1000 g/eq, and optionally thinner, pigments, fillers, etc. dispersed in water; and (iii) the preparation of the dispersions at most 65 deg C. Preferably the epoxide resin in (A) is polyglycidyl ether based on Bisphenol A, Bisphenol F and/or novolacs and preferably of epoxide functionality 1.5-2.7 and average epoxide equivalent wt. 160-360 g/eq. The epoxide resin in (B) is polypropylene glycol diglycidyl ether and/or diglycidyl ether based on ethylene oxide/propylene oxide copolymer(s) and preferably of epoxide functionality 1.5-2.7 and average epoxide equivalent wt. 250-800 g/eq. The terminated polyalkylene glycols are preferably an ethylene oxide/propylene oxide copolymer of EO/PO ratio 18.6/1.6 and of average mol. wt. 1000 terminated with an amino group and/or an ethylene oxide/propylene oxide copolymer of EO/PO ratio 32/10 and of average mol. wt. 2000 terminated with an amino group.

IPC 1-7

C08G 59/10; C08L 63/00; C08J 3/03

IPC 8 full level

C08J 3/03 (2006.01); **C04B 24/28** (2006.01); **C08G 59/10** (2006.01); **C08G 59/14** (2006.01); **C08G 59/18** (2006.01); **C08L 63/00** (2006.01); **C09K 3/10** (2006.01); **C09K 23/52** (2022.01)

CPC (source: EP US)

C04B 24/281 (2013.01 - EP US); **C08G 59/184** (2013.01 - EP US); **C08L 63/00** (2013.01 - EP US); **C09K 3/10** (2013.01 - EP US); C09K 2200/0647 (2013.01 - EP US)

Citation (search report)

See references of WO 9825988A1

Designated contracting state (EPC)

AT BE CH DE ES FR GB IE IT LI NL PT

DOCDB simple family (publication)

DE 19751143 A1 19980528; AU 5482298 A 19980703; CA 2242975 A1 19980618; EP 0883638 A1 19981216; JP 2000504372 A 20000411; US 6077884 A 20000620; WO 9825988 A1 19980618

DOCDB simple family (application)

DE 19751143 A 19971119; AU 5482298 A 19971114; CA 2242975 A 19971114; EP 9706364 W 19971114; EP 97951203 A 19971114; JP 52613498 A 19971114; US 10190898 A 19980925