

Title (en)

USE OF COPOLYMERS CONTAINING SULFONIC ACID GROUPS, AS AN ADDITIVE IN DETERGENTS AND CLEANSERS

Title (de)

VERWENDUNG VON SULFONS UREGRUPPENHALTIGEN COPOLYMEREN ALS ZUSATZ IN WASCH- UND REINIGUNGSMITTELN

Title (fr)

UTILISATION DE COPOLYMERES CONTENANT DES GROUPES D'ACIDE SULFONIQUE COMME ADJUVANTS DANS LES PRODUITS DETERGENTS

Publication

EP 1516040 A1 20050323 (DE)

Application

EP 03740180 A 20030604

Priority

- DE 10225794 A 20020610
- EP 0305821 W 20030604

Abstract (en)

[origin: DE10225794A1] Sulfonic acid group copolymer composition comprises (a) 30-95 mole% of at least one monoethylenically unsaturated carboxylic acid, (b) 3-35 mole% of at least one sulfonic acid group containing monomers, and (c) 1-35 mole% of nonionic monomer obtained by statistical or block polymerization. Sulfonic acid group copolymer composition comprises: (1) 30-95 mole% of at least one monoethylenically unsaturated carboxylic acid; (2) 3-35 mole% of at least one sulfonic acid group containing monomer of formula (I); and (3) 1-35 mole% of nonionic monomer of formula (II). R = H or Me; R1 = branched 1-4C alkyl; X = chemical bond or -COO-R1; and M = H, alkali metal, or ammonium. R2 = H or Me; R3 = chemical bond or optionally branched 1-6C alkylene; R4 = optionally branched 2-4C alkylene; R5 = optionally branched 1-6C alkyl, 5-8C cycloalkyl, or aryl; n = 3-50. The polymer is obtained by statistical or block polymerization.

IPC 1-7

C11D 3/37

IPC 8 full level

C08F 290/06 (2006.01); **C11D 3/37** (2006.01)

CPC (source: EP US)

C11D 3/378 (2013.01 - EP US)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)

DE 10225794 A1 20031218; AT E439419 T1 20090815; AU 2003274111 A1 20031222; CA 2488329 A1 20031218; CA 2488329 C 20101123; CN 1297647 C 20070131; CN 1659265 A 20050824; DE 50311809 D1 20090924; EP 1516040 A1 20050323; EP 1516040 B1 20090812; ES 2328683 T3 20091117; JP 2005533137 A 20051104; MX PA04011362 A 20050214; US 2005202994 A1 20050915; US 2008281053 A1 20081113; US 7645345 B2 20100112; WO 03104372 A1 20031218

DOCDB simple family (application)

DE 10225794 A 20020610; AT 03740180 T 20030604; AU 2003274111 A 20030604; CA 2488329 A 20030604; CN 03813447 A 20030604; DE 50311809 T 20030604; EP 0305821 W 20030604; EP 03740180 A 20030604; ES 03740180 T 20030604; JP 2004511433 A 20030604; MX PA04011362 A 20030604; US 18190008 A 20080729; US 51563805 A 20050513