

Title (en)

COMPOSITIONS CONSISTING OF BIODEGRADABLE POLYMERS AND FLUORESCENT DYES

Title (de)

ZUSAMMENSETZUNGEN AUS BIOLOGISCH ABBAUBARE POLYMEREN UND FLUORESZENZFARBSTOFFEN

Title (fr)

COMPOSITIONS CONSTITUEES DE POLYMERES BIODEGRADABLES ET DE COLORANTS A FLUORESCENCE

Publication

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Application

**EP 99953797 A 19991013**

Priority

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Abstract (en)

[origin: DE19848873A1] A composition containing: (X) a biologically degradable polymer and (Y) at least one fluorescent dye is new. Independent claims are also included for: (1) An acid component (A) from: (a1) 30-95 mole% of at least one aliphatic or cycloaliphatic dicarboxylic acid, an ester forming derivative, or a mixture of these, (a2) 5-70 mole% of at least one aromatic dicarboxylic acid or an ester forming derivative, or a mixture of these, (a3) 0-5 mole% of a compound containing sulfonate groups; (B) a diol component selected from: at least one 2-12C alkanediol and at least one 5-10C cycloalkanediol or their mixtures, and optionally one or more components selected from: (C) a component selected from: (c1) at least one ether-functional dihydroxy compound of formula (I):  $\text{HO}((\text{CH}_2)_n\text{O})_m\text{H}$  (I)  $\text{HO}-(\text{C}(\text{O})-\text{G}-\text{O})_p\text{H}$  (IIa)  $n = 2,3$ , or 4, and  $m = 2-250$ , (c2) at least one hydroxycarboxylic acid of formula (IIa) or (IIb):  $p = 1-1500$ ,  $r = 1-4$ ,  $G =$  a residue selected from phenylene,  $-(\text{CH}_2)_q-$ , where  $q = 1-5$ ,  $-\text{C}(\text{R})\text{H}-$ , and  $-\text{C}(\text{R})\text{HCH}_2$ , where  $\text{R} = \text{Me}$  or  $\text{Et}$ , (c3) = at least one 2-12C amino-alkanol or at least one 5-10C-aminocycloalkanol or their mixtures, (c4) = at least one 1-8C diaminoalkane, (c5) = at least one 2,2-bisoxazoline of formula (III): where  $\text{R}_{<1>} =$  a single compound, a  $(\text{CH}_2)$ , with  $z$ -alkylene groups, with  $z = 2,3$ , or 4, or phenyl, (c6) = at least one aminocarboxylic acid, selected from a group consisting of natural aminoacids, polyamides of maximum molecular weight 18000 g/mol, obtainable by polycondensation of a 4-6C dicarboxylic acid and a 4-10C diamine, compounds of formula IVa and IVb: where  $s = 1-1500$ , and  $t = 1-4$ , and  $T =$  a residue selected from a group consisting of phenylene,  $-(\text{CH}_2)_n-$ , where  $n = 1-12$ ,  $-\text{C}(\text{R}_{<2>})\text{H}-$ , and  $-\text{C}(\text{R}_{<2>})\text{HCH}_2$ , where  $\text{R}_{<2>} = \text{Me}$ ,  $\text{Et}$ , polyoxazoline with the recurring unit  $V$ : where  $\text{R}_{<3>} = \text{H}$ , 1-6C alkyl, 5-8C cycloalkyl, unsubstituted or substituted with 1-4C alkyl up to 3-fold substituted phenyl, or equals tetrahydrofuryl, or mixture of (c1) to (c6); and (D), a component selected from: (d1) at least one compound with at least 3 groups able to form esters, (d2) at least one isocyanate, and (d3) at least one divinylether, or a mixture of (d1) to (d3); (2) a shaped body, film, or fibers obtained from the composition; (3) a process for labelling a biologically degradable polymer (X) involving mixing it with at least one fluorescent dye (Y) in an amount such that a fluorescence is produced which can be detected by a detector when the composition is subjected to electromagnetic radiation; (4) sorting of a compost mill, where the biologically degradable polymer contained in it is detected, loaded into the compost mill, and the unlabelled biologically undegradable polymer is removed from the compost mill.  $\text{HO}-(\text{C}(\text{O})-\text{T}-\text{N}(\text{N})-\text{sH}$  (IVa)

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