

Title (en)  
DETERGENT HAVING IMPROVED PERFORMANCE

Title (de)  
REINIGUNGSMITTEL MIT VERBESSERTER LEISTUNGSFÄHIGKEIT

Title (fr)  
DÉTERGENT DOTÉE DE PERFORMANCES AMÉLIORÉES

Publication  
**EP 3599272 B1 20230906 (EN)**

Application  
**EP 18185929 A 20180727**

Priority  
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Abstract (en)  
[origin: EP3599272A1] The present invention is related to the use of polymers, obtainable by radical-induced copolymerization of monomers according to formula I, in which, independently from each other, R<sup>1</sup> and R<sup>2</sup> is H or an alkyl group with 1 to 4 C-atoms, R<sup>3</sup> and R<sup>4</sup> is H or a methyl group, and n is a number from 1 to 200, with monomers according to formula II, in which, independently from each other, R<sup>5</sup>, R<sup>6</sup> and R<sup>7</sup> is H or an alkyl group with 1 to 4 C-atoms with the proviso that at least one of R<sup>5</sup> and R<sup>6</sup> is H, and with branching monomers according to formula III, in which R<sup>8</sup> is H or an alkyl group with 1 to 4 C-atoms, R<sup>9</sup> is -C(O)-O-R<sup>11</sup>-, -C(O)-NR<sup>11</sup>-R<sup>12</sup>-, -O-R<sup>11</sup>-, an arylene group, a linear or branched alkylene group with 1 to 20 C-atoms, or -(CH<sub>2</sub>)<sub>2</sub>-CHR<sup>13</sup>-O<sub>m</sub>-, R<sup>10</sup> is -C(S)-S-R<sup>14</sup>-, -C(S)-R<sup>15</sup>-, -C(S)-NR<sup>16</sup>-R<sup>17</sup>-, or -C(S)-O-R<sup>18</sup>-, R<sup>11</sup> is a linear or branched alkylene group with 1 to 20 C-atoms, or -(CH<sub>2</sub>)<sub>2</sub>-CHR<sup>13</sup>-O<sub>m</sub>-, R<sup>12</sup> is H or a linear or branched alkylene group with 1 to 20 C-atoms, or -(CH<sub>2</sub>)<sub>2</sub>-CHR<sup>13</sup>-O<sub>m</sub>-, R<sup>13</sup> is H or a methyl group, R<sup>14</sup> is a linear or branched alkylene group with 1 to 20 C-atoms, or a pyrrolidone group, R<sup>15</sup> is an aryl group or a linear or branched alkylene group with 1 to 20 C-atoms, or a pyrrolidone group, R<sup>16</sup>, R<sup>17</sup> and R<sup>18</sup> are, independently from each other, H, an aryl group, a linear or branched alkyl group with 1 to 20 C-atoms, or -(CH<sub>2</sub>)<sub>2</sub>-CHR<sup>13</sup>-O<sub>m</sub>-H, and m is a number of from 1 to 20, to improve the cleaning performance of detergents.

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