

Title (en)
PHOSPHATE-FREE WASHING AGENT AND PROCESS FOR ITS PRODUCTION

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Application
EP 79103848 A 19791008

Priority
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Abstract (en)
[origin: EP0010247A1] 1. A phosphate-free detergent containing water-insoluble aluminosilicate cation exchangers, surfactants, water-soluble complexing builders, an alkali silicate and, optionally, a peroxy bleach component and consisting of at least two powder constituents of which one contains the aluminosilicate and a surfactant and the other the alkali silicate, characterised in that it contains the following constituents : (i) from 20 to 65% by weight of a water-insoluble, finely particulate, synthetically produced crystalline alkali aluminosilicate containing bound water and corresponding to the following formula $0.7-1.5 \text{ Me}_2\text{O} \cdot \text{Al}_2\text{O}_3 \cdot 1.3-4.0 \text{ SiO}_2$ (Me = sodium or potassium) based on the anhydrous active substance, which has a calcium binding capacity determined at 22 degrees C of from 50 to 200 and preferably from 100 to 200 mg of CaO/g of anhydrous active substance ; (ii) from 5 to 30% by weight of a surfactant component consisting of at least one synthetic anionic, non-ionic, amphoteric or zwitter-ionic surfactant and, optionally, foam-inhibiting additives ; (iii) from 1 to 7, preferably from 2 to 5 and more preferably from 2 to 3% by weight of a solid, powder-form sodium silicate which has the following molar composition $\text{Na}_2\text{O} \cdot 2.0-2.2 \text{ SiO}_2$ and a water content of from 15 to 23 and preferably from 18 to 21% by weight and of which the solubility in water in the preparation of a 5% aqueous solution (by adding 5 g of the sodium silicate all at once with uniform stirring at about 180-200 r.p.m. to 95 g of water having a temperature of 20 degrees C) amounts after 1 minute to at least 75% by weight, preferably to at least 85% by weight, after 3 minutes to at least 95% by weight and after at most 25 minutes to 100% by weight ; and (iv) from 0.05 to 0.75 and preferably from 0.2 to 0.6% by weight of a water-soluble organic complexing agent from the group of substituted alkane di- and tri-phosphonic acids in the form of the alkali metal or alkaline earth metal salts ; the detergent being a mixture of at least 2 powder constituents A) and B), of which A) is a powder constituent obtained by drying an aqueous suspension of the constituents at elevated temperature and containing the water-insoluble alkali aluminosilicate according to (i), the surfactant component according to (ii), optionally without or with only part of the non-ionic surfactants, and optionally the water-soluble organic complexing builders according to (iv) ; whilst B) is a powder constituent containing the sodium silicate powder according to (iii), optionally together with the water-soluble organic complexing builders according to (iv) and optionally together with non-ionic surfactants sensitive to high-temperature drying and optionally other hydrolysis- and temperature-sensitive detergent additives.

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IPC 8 full level
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CPC (source: EP)
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Cited by
EP0028432A1; EP0242141A3; US4988454A; EP0228011A3; US5501814A; EP0061296A1; US4637891A; EP0123489A3; FR2524901A1; WO9215663A1; WO2011080540A1

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