

Title (en)  
PHOSPHATE-FREE DISHWASHING AGENT

Publication  
**EP 0267371 B1 19900314 (DE)**

Application  
**EP 87110811 A 19870725**

Priority  
DE 3627773 A 19860816

Abstract (en)  
1. Claims for the Contracting States : AT, BE, CH, DE, FR, IT, LI, NL, SE A phosphate-free dishwashing agent containing, as a builder, sodium silicate and also, as a co-builder, a polymeric and/or copolymeric carboxylic acid or a salt of this polymeric carboxylic acid and an active chlorine carrier, which contains, as a sodium silicate builder, crystalline, sheet-like sodium silicate of the formula  $\text{Na M Six O}_{2x+1} \cdot y\text{H}_2\text{O}$  in which M denotes sodium or hydrogen, x denotes a number from 1.9 to 4 and y denotes a number from 0 to 20. 1. Claims for the Contracting State : ES Process for producing phosphate-free dishwashing agent containing, as a builder, sodium silicate and also, as co-builder, a polymeric and/or copolymeric carboxylic acid and an active chlorine carrier, characterized in that, as a sodium silicate builder, crystalline, sheet-like sodium silicate of the general formula  $\text{Na M Six O}_{2x+1} \cdot y\text{H}_2\text{O}$  in which M denotes sodium or hydrogen, x denotes a number from 1.9 to 4 and y denotes a number from 0 to 20, is worked into.

IPC 1-7  
**C11D 3/00**; **C11D 3/08**; **C11D 3/12**

IPC 8 full level  
**C11D 3/60** (2006.01); **C11D 3/00** (2006.01); **C11D 3/08** (2006.01); **C11D 3/12** (2006.01); **C11D 3/37** (2006.01)

CPC (source: EP US)  
**C11D 3/1273** (2013.01 - EP US); **C11D 3/3761** (2013.01 - EP US)

Cited by  
EP0419970A3; EP0416366A3; GB2234980A; EP0563631A1; EP0653480A1; EP0668344A3; EP0668344A2; WO9325651A1; WO9213935A1

Designated contracting state (EPC)  
AT BE CH DE ES FR IT LI NL SE

DOCDB simple family (publication)  
**US 4959170 A 19900925**; AT E51018 T1 19900315; CA 1305007 C 19920714; DE 3627773 A1 19880218; DE 3761909 D1 19900419; DK 165882 B 19930201; DK 165882 C 19930621; DK 425387 A 19880217; DK 425387 D0 19870814; EP 0267371 A1 19880518; EP 0267371 B1 19900314; ES 2014283 B3 19900701; JP S6348399 A 19880301; NO 169599 B 19920406; NO 169599 C 19920715; NO 873410 D0 19870813; NO 873410 L 19880217; PT 85539 A 19870901; PT 85539 B 19900629

DOCDB simple family (application)  
**US 27469188 A 19881121**; AT 87110811 T 19870725; CA 543846 A 19870806; DE 3627773 A 19860816; DE 3761909 T 19870725; DK 425387 A 19870814; EP 87110811 A 19870725; ES 87110811 T 19870725; JP 20011587 A 19870812; NO 873410 A 19870813; PT 8553987 A 19870814