

Title (en)  
Cleaning agent

Title (de)  
Reinigungsmittel

Title (fr)  
Produit de nettoyage

Publication  
**EP 2487232 A1 20120815 (DE)**

Application  
**EP 12166941 A 20080403**

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Abstract (en)  
Machine dishwashing agents comprises a polycarbonate-, polyurethane- and/or polyurea-polyorganosiloxane compounds (I) or their acid addition compounds and/or salts. Machine dishwashing agents comprises a polycarbonate-, polyurethane- and/or polyurea-polyorganosiloxane compounds of formula  $(-Y\ 1>A-(C=O)-A-)$  (I) or their acid addition compounds and/or salts. Either A : S, O or NR 1>; and Y 1>bivalent to polyvalent, preferably tetravalent, optionally saturated up to 1000C aromatic hydrocarbon containing one or more NR 2>, N +>R 2>R 3> (both preferred), O, (CO), NH, 2-1000 polyorganosiloxane unit with silicon atom (optionally substituted), preferably oligoethoxy and/or oligopropoxy (where its oligomerization degree is preferably 2-60) or oligoethylene imine (where its oligomerization degree is preferably 10-150000); or Y 1>A : nitrogen containing heterocyclic ring; R 1>H, optionally saturated up to 40C aromatic hydrocarbon containing one or more O, (CO), NH, NR 2>, preferably oligoethoxy and/or oligopropoxy (where its oligomerization degree is preferably 2-60) or oligoethylene imine (where its oligomerization degree is preferably 10-150000); R 2>optionally saturated up to 40C aromatic hydrocarbon containing one or more O, (CO), NH, preferably oligoethoxy and/or oligopropoxy (where its oligomerization degree is preferably 2-60) or oligoethylene imine (where its oligomerization degree is preferably 10-150000); and R 3>optionally saturated up to 100C aromatic hydrocarbon containing one or more O, (CO), NH, a bivalent residue, which form cyclic structures within the Y 1>, preferably oligoethoxy and/or oligopropoxy preferably oligoethoxy and/or oligopropoxy (where its oligomerization degree is preferably 2-60) or oligoethylene imine (where its oligomerization degree is preferably 10-150000). Provided that: in formula (I), A, Y 1>, R 1>, R 2> and R 3> are not same, when at least one of the residues of Y 1> is polyorganosiloxane unit with 2-1000 silicon atom. An independent claim is included for the machine dishwashing agents comprising [1,3]-dioxolan-2-one compound of formula (IV) or [1,3]-diazepan-2-one compound of formula (V) and/or a polymer, which is obtained by the reaction of a polymer substrate (that modifies the functional groups of hydroxy-, primary and secondary amino- group) with (IV) or (V). R : 1-12C-alkyl; X : CO-CH=CH 2, CO-C(CH 3)=CH 2, CO-O-aryl, 2-6C-alkylene-SO 2-CH=CH 2 or CO-NH-R1a; R1a : 1-30C-alkyl, 1-30C-haloalkyl, 1-30C-hydroxyalkyl, 1-6C-alkyloxy-1-30C-alkyl, 1-6C-alkylcarbonyloxy-1-30C-alkyl, amino-1-30C-alkyl, mono- or di(1-6C-alkyl)amino-1-30C-alkyl, ammonio-1-30C-alkyl, polyoxyalkylene-1-30C-alkyl, polysiloxanyl-1-30C-alkyl, (meth)acryloyloxy-1-30C-alkyl, sulfonyl-1-30C-alkyl, phosphono-1-30C-alkyl, di(1-6C-alkyl)-phosphono-1-30C-alkyl, phosphonato-1-30C-alkyl, di(1-6C-alkyl) phosphonato-1-30Calkyl or a saccharide; and k : greater than 0. Provided that: in formula (IV), when k is 1, X has the above variable or when k is greater than 1, X is: (i) polyamine bonded with ((CO)-NH), (ii) polymer skeleton bonded with (CO)-, NH-2-6C-alkylene-O(CO)- or (CO)-O-2-6C-alkylene-O(CO)- or (iii) polymer skeleton bonded with (CO)-polysiloxanyl-1-30C-alkyl-groups. [Image] .

Abstract (de)  
Bei Mitteln zur maschinellen Reinigung von Geschirr sollte die nach deren Anwendung auftretende Bildung von Kalkflecken und -belägen vermieden werden bzw. die Trocknung des Geschirrs beschleunigt werden. Dies gelang durch den Einsatz einer Verbindung der allgemeinen Formeln IV oder V

IPC 8 full level  
**C11D 3/37** (2006.01); **C11D 3/00** (2006.01); **C11D 3/20** (2006.01); **C11D 3/22** (2006.01); **C11D 3/28** (2006.01); **C11D 3/32** (2006.01); **C11D 3/34** (2006.01); **C11D 3/36** (2006.01); **C11D 11/00** (2006.01)

CPC (source: EP KR US)  
**C11D 3/2096** (2013.01 - EP US); **C11D 3/22** (2013.01 - KR); **C11D 3/28** (2013.01 - EP US); **C11D 3/32** (2013.01 - EP US); **C11D 3/34** (2013.01 - KR); **C11D 3/3454** (2013.01 - EP US); **C11D 3/349** (2013.01 - EP US); **C11D 3/364** (2013.01 - EP US); **C11D 3/37** (2013.01 - EP KR US); **C11D 3/373** (2013.01 - EP US); **C11D 3/3742** (2013.01 - EP US); **C11D 3/3788** (2013.01 - EP US); **C11D 2111/14** (2024.01 - EP US)

Citation (applicant)  
WO 2005058863 A1 20050630 - DEUTSCHES WOLFFORSCHINST [DE], et al

Citation (search report)  
• [XDA] WO 2005058863 A1 20050630 - DEUTSCHES WOLFFORSCHINST [DE], et al  
• [A] WO 2006127882 A2 20061130 - DOW CORNING [US], et al

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