CLAIMS

1. Cleaning agent containing the following components:

a) at least one negatively-charged, organic macromolecule;
b) at least one non-ionic, anionic, cationic, or amphoteric wetting agent;
c) at least one non-ionic, anionic, cationic, or amphoteric emulsifying agent for the at least one wetting agent,

characterised in that

b1) the non-ionic wetting agent is an acetylene diol or a polydimethylsiloxane;
b2) the anionic wetting agent is an anionic perfluoroalkyl polymer or an alkyl sulfosuccinate;
b3) the cationic wetting agent is a cationic perfluoroalkyl copolymer;
and that
cleaning agent is available in granular or tablet form.

2. Cleaning agent, characterised in that the negatively-charged, organic macromolecule is a polymeric anti-redeposition agent.

3. Cleaning agent according to claim 1, characterised in that the at least one negatively-charged, organic macromolecule is selected from the following substance classes: aminopolycarboxylates, organic phosphonates, polycarboxylates or copolymers thereof.

4. Cleaning agent according to claim 1, characterised in that the at least one negatively-charged, organic macromolecule is a poly(aspartic acid) or water-soluble salt thereof.

5. Cleaning agent according to claim 1, characterised in that the at least one negatively-charged, organic macromolecule is a polyacrylate.

6. Cleaning agent according to claim 5, characterised in that the polyacrylate is an acrylic homopolymer, preferably with a molecular weight of from 4,000 to 6,000.

7. Cleaning agent according to one of claims 1 through 6, characterised in that the negatively-charged, organic macromolecule is used in granular form and the average diameter of the individual granular particle is preferably 400 to 800 µm.

8. Cleaning agent according to one of claims 1 through 6, characterised in that the non-ionic wetting agent is an alkoxylated acetylene diol.

9. Cleaning agent according to one of claims 1 through 8, characterised in that the non-ionic emulsifying agent is selected from the group of fatty alcohol alkoxylates.

10. Cleaning agent according to one of claims 1 through 9, characterised in that the anionic emulsifying agent is selected from the group of alkyl sulfates or alkyl ether sulfates.

11. Cleaning agent according to one of claims 1 through 10, characterised in that the cationic emulsifying agent is selected from the group of quaternary ammonium compounds.

12. Cleaning agent according to one of claims 1 through 11, characterised in that the amphoteric emulsifying agent is selected from the group of betaines and sultaines.

13. Cleaning agent according to one of claims 4 through 12, characterised in that the at least one poly(aspartic acid) or salt thereof has a molecular mass between 1,000 and 10,000 g/mol, preferably 2,000 to 3,000 g/mol.

14. Cleaning agent according to one of claims 1 through 13, characterised in that the wetting agent comprises one or more ethoxylated acetylene diols as wetting agents.

15. Cleaning agent according to one of claims 1 through 14, characterised in that the emulsifying agent comprises one or more, preferably branched, ethoxylated fatty alcohols.

16. Cleaning agent according to one of claims 1 through 15, characterised in that it additionally contains water.

17. Cleaning agent according to claim 16, characterised in that the surface tension of the

aqueous solution of the cleaning agent at room temperature is lowered to a value below 40 mN/m, preferably below 30 mN/m, within at most 1 second, preferably within at most 0.6 second.

18. Cleaning agent according to one of claims 1 through 15, characterised in that it is available as a tablet with a volume of at least 1 cm^3, preferably at least 5 cm^3.

19. Cleaning agent according to one of claims 1 through 15, characterised in that it is available as a tablet with a volume of at most 100 cm^3, preferably at most 12 cm^3.

20. Cleaning agent according to claims 18 and 19, characterised in that it is available as a tablet with a maximum diameter of 10 cm, preferably 7 cm.

21. Cleaning agent according to one of claims 18 through 20, characterised in that it is available as a tablet with a minimum diameter of 1 cm, preferably 3 cm.

22. Cleaning agent according to one of claims 18 through 21, characterised in that the at least one negatively-charged, organic macromolecule and preferably the at least one poly(aspartic acid) or water-soluble salt thereof is available in particle form with a particle size distribution D50 of 0.1 mm.

23. Cleaning agent according to claim 22, characterised in that the particle size distribution D50 is 0.07 mm, preferably 0.01 mm.

24. Cleaning agent according to one of claims 18 through 23, characterised in that it contains the following additional component:
d) effervescent mixture from a carbonate and an organic acid, preferably in equimolar amounts.

25. Cleaning agent according to claim 24, characterised in that the effervescent mixture is a mixture of citric acid, Na hydrogen carbonate, and/or sodium carbonate.

26. Cleaning agent according to one of claims 18 through 25, characterised in that it additionally contains a substance that swells in water, preferably polyvinylpyrrolidone.

27. Cleaning agent according to one of claims 15 through 26, characterised in that the branched, ethoxylated fatty alcohol is an iso-C8-C18 non-ionic surfactant, which is preferably etherified with 2-20 ethylene oxide units.

28. Cleaning agent according to claim 27, characterised in that the branched, ethoxylated fatty alcohol is an iso-C10-C14 non-ionic surfactant, which is preferably etherified with 5-10 ethylene oxide units.

29. Cleaning agent according to claim 28, characterised in that the iso-C8-C18 non-ionic surfactant is iso-C13(10EO) or iso-C11(7EO).

30. Cleaning agent according to one of claims 1 through 29, characterised in that the proportions of components a), b), and c) have the following relationship with one another:

Component a) 0.1 - 100 parts by weight;
Component b) 0.05 - 50 parts by weight;
Component c) 0.01 - 50 parts by weight.

31. Cleaning agent according to claim 30, characterised in that the proportions of components a), b), and c) have the following relationship with one another:

Component a) 1 - 10 parts by weight;
Component b) 0.5 - 5 parts by weight;
Component c) 0.1 - 5.0 parts by weight.

32. Cleaning agent according to claim 31, characterised in that the proportions of components a), b), and c) have the following relationship with one another:

Component a) 3 - 5 parts by weight;
Component b) 1 - 2 parts by weight;
Component c) 1 - 2 parts by weight.

33. Cleaning agent according to one of claims 24 through 32, characterised in that, in addition to the proportions of components a), b), and c), the proportion of component d) is provided:

Component d): 0.3 - 150 parts by weight, preferably 3.0 – 15.0 parts by weight.

34. Cleaning agent according to one of claims 18 through 33, characterised in that the

cleaning agent formed as a tablet dissolves residue-free in water in less than 10 minutes, preferably in less than 2 minutes.

35. Cleaning agent according to one of claims 16 through 34, characterised in that it contains 500 – 100,000 parts by weight of water based on one part by weight of the sum of the three components a) + b) + c).

36. Cleaning agent according to claim 35, characterised in that it contains 600 to 1900 parts by weight of water, preferably 900 to 1300 parts by weight of water based on one part by weight of the sum of the three components a) + b) + c).

37. Cleaning agent according to one of claims 1 through 36, characterised in that it additionally contains a complexing agent.

38. Cleaning agent according to one of claims 1 through 37, characterised in that the wetting agent is selected such that the surface tension of said cleaning agent at room temperature is measured to be less than 30 mN/m.

39. Use of the cleaning agent according to one of claims 1 through 38 for the cleaning of water-resistant, especially non-textile surfaces.

40. Use of the cleaning agent according to one of claims 1 through 38 in scrubbing machines.

41. Use of the cleaning agent according to one of claims 1 through 38 for wet mopping.

42. Use of the cleaning agent according to one of claims 1 through 38 for manual or industrial foams.

CLAIMS

1. Cleaning agent suitable for the cleaning of water-resistant, especially non-textile surfaces, in scrubbing machines, for wet mopping and for manual or industrial foams; the cleaning agent containing the following components:

a) at least one substance selected from:
(i) a polymeric anti-redeposition agent;
(ii) aminopolycarboxylates, organic phosphonates, polycarboxylates or copolymers thereof;
(iii) a poly(aspartic acid) or water-soluble salts thereof; or
(iv) a polyacrylate.

b) at least one non-ionic, anionic, cationic, or amphoteric wetting agent;
(i) the non-ionic wetting agent being an acetylene diol or a polydimethylsiloxane;
(ii) the anionic wetting agent being an anionic perfluoroalkyl polymer or an alkyl sulfosuccinate;
(iii) the cationic wetting agent being a cationic perfluoroalkyl copolymer; and

c) at least one non-ionic, anionic, cationic, or amphoteric emulsifying agent for the at least one wetting agent,
characterized in that
d) the proportions of components a), b), and c) have the following relationship with one another:
Component a) 1 - 10 parts by weight;
Component b) 0.5 - 5 parts by weight;
Component c) 0.1 - 5.0 parts by weight; and
e) the cleaning agent is available in granular or tablet form.

2. Cleaning agent according to claim 1, characterised in that the polyacrylate is an acrylic homopolymer, preferably with a molecular weight of from 4,000 to 6,000.

3. Cleaning agent according to claim 1 or 2, characterised in that component a) is used in granular form and the average diameter of the individual granular particle is preferably 400 to 800 µm.

4. Cleaning agent according to one of claims 1 through 3, characterised in that the non-ionic wetting agent is an alkoxylated acetylene diol.

5. Cleaning agent according to one of claims 1 through 4, characterised in that the non-ionic emulsifying agent is selected from the group of fatty alcohol alkoxylates.

6. Cleaning agent according to one of claims 1 through 5, characterised in that the anionic emulsifying agent is selected from the group of alkyl sulfates or alkyl ether sulfates.

7. Cleaning agent according to one of claims 1 through 6, characterised in that the cationic emulsifying agent is selected from the group of quaternary ammonium compounds.

8. Cleaning agent according to one of claims 1 through 7, characterised in that the amphoteric emulsifying agent is selected from the group of betaines and sultaines.

9. Cleaning agent according to one of claims 1 through 8, characterised in that the at least one poly(aspartic acid) or salt thereof has a molecular mass between 1,000 and 10,000 g/mol, preferably 2,000 to 3,000 g/mol.

10. Cleaning agent according to one of claims 1 through 9, characterised in that the wetting agent comprises one or more ethoxylated acetylene diols as wetting agents.

11. Cleaning agent according to one of claims 1 through 10, characterised in that the emulsifying agent comprises one or more, preferably branched, ethoxylated fatty alcohols.

12. Cleaning agent according to one of claims 1 through 11, characterised in that it additionally contains water.

13. Cleaning agent according to claim 12, characterised in that the surface tension of the aqueous solution of the cleaning agent at room temperature is lowered to a value below 40 mN/m, preferably below 30 mN/m, within at most 1 second, preferably within at most 0.6 second.

14. Cleaning agent according to one of claims 1 through 13, characterised in that it is available as a tablet with a volume of at least 1 cm^3, preferably at least 5 cm^3.

15. Cleaning agent according to one of claims 1 through 14, characterised in that it is available as a tablet with a volume of at most 100 cm^3, preferably at most 12 cm^3.

16. Cleaning agent according to claims 1 to 15, characterised in that it is available as a

tablet with a maximum diameter of 10 cm, preferably 7 cm.

17. Cleaning agent according to one of claims 1 to 16, characterised in that it is available as a tablet with a minimum diameter of 1 cm, preferably 3 cm.

18. Cleaning agent according to one of claims 1 to 17, characterised in that component a) and preferably the at least one poly(aspartic acid) or water-soluble salt thereof is available in particle form with a particle size distribution D50 of 0.1 mm.

19. Cleaning agent according to claim 18, characterised in that the particle size distribution D50 is 0.07 mm, preferably 0.01 mm.

20. Cleaning agent according to one of claims 1 to 19, characterised in that it contains the following additional component:
d) effervescent mixture from a carbonate and an organic acid, preferably in equimolar amounts.

21. Cleaning agent according to claim 20, characterised in that the effervescent mixture is a mixture of citric acid, Na hydrogen carbonate, and/or sodium carbonate.

22. Cleaning agent according to one of claims 1 to 21, characterised in that it additionally contains a substance that swells in water, preferably polyvinylpyrrolidone.

23. Cleaning agent according to one of claims 11 to 22, characterised in that the branched, ethoxylated fatty alcohol is an iso-C8-C18 non-ionic surfactant, which is preferably etherified with 2-20 ethylene oxide units.

24. Cleaning agent according to claim 23, characterised in that the branched, ethoxylated fatty alcohol is an iso-C10-C14 non-ionic surfactant, which is preferably etherified with 5-10 ethylene oxide units.

25. Cleaning agent according to claim 23, characterised in that the iso-C8-C18 non-ionic surfactant is iso-C13(10EO) or iso-C11(7EO).

26. Cleaning agent according to one of claims 1 through 25, characterised in that the

proportions of components a), b), and c) have the following relationship with one another:

Component a) 0.1 - 100 parts by weight;

Component b) 0.05 - 50 parts by weight;

Component c) 0.01 - 50 parts by weight.

27. Cleaning agent according to claim 26, characterised in that the proportions of components a), b), and c) have the following relationship with one another:

Component a) 3 - 5 parts by weight;

Component b) 1 - 2 parts by weight;

Component c) 1 - 2 parts by weight.

28. Cleaning agent according to one of claims 20 to 27, characterised in that, in addition to the proportions of components a), b), and c), the proportion of component d) is provided:

Component d): 0.3 - 150 parts by weight, preferably 3.0 – 15.0 parts by weight.

29. Cleaning agent according to one of claims 1 to 28, characterised in that the cleaning agent formed as a tablet dissolves residue-free in water in less than 10 minutes, preferably in less than 2 minutes.

30. Cleaning agent according to one of claims 12 to 29, characterised in that it contains 500 – 100,000 parts by weight of water based on one part by weight of the sum of the three components a) + b) + c).

31. Cleaning agent according to claim 30, characterised in that it contains 600 to 1900 parts by weight of water, preferably 900 to 1300 parts by weight of water based on one part by weight of the sum of the three components a) + b) + c).

32. Cleaning agent according to one of claims 1 through 31, characterised in that it additionally contains a complexing agent.

33. Cleaning agent according to one of claims 1 through 32, characterised in that the wetting agent is selected such that the surface tension of said cleaning agent at room temperature is measured to be less than 30 mN/m.

34. Use of the cleaning agent according to one of claims 1 through 33, for the cleaning of

water-resistant, especially non-textile surfaces.

35. Use of the cleaning agent according to one of claims 1 through 33 in scrubbing machines.

36. Use of the cleaning agent according to one of claims 1 through 33 for wet mopping.

37. Use of the cleaning agent according to one of claims 1 through 33 for manual or industrial foams.