Claims

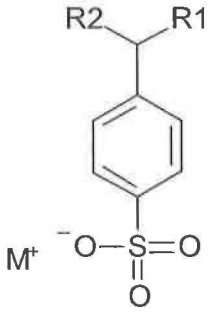
1. An aqueous stripping composition for the removal of polymeric surface sealants on metal surfaces, said stripping composition comprising:

a) 30-300 g/L of an alkalizing agent selected from alkali hydroxides and alkaline earth hydroxides,

b) 1-100 g/L of a polymer splitting agent wherein the polymer splitting agent is at least one gluconate,

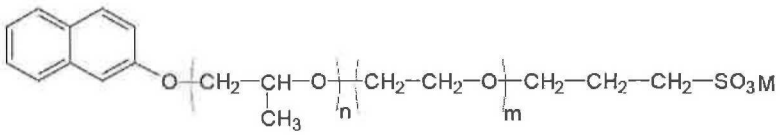
c) 5-150 g/L of a swelling agent wherein the swelling agent is at least one compound selected from the group consisting of glycol ethers and mono-alcohols having 3 to 9 carbon atoms,

d) a cloud point booster wherein the cloud point booster is at least one of (i) alkylbenzenesulfonate according to formula I



(I)

wherein R_1 and R_2 are independently from each other H or a branched or unbranched C_1 to C_{13} alkyl group, and M is at least one metal selected from the group consisting Li, Na, K, or (ii) a naphthyl sulfopropyl diether according to formula II



(II)

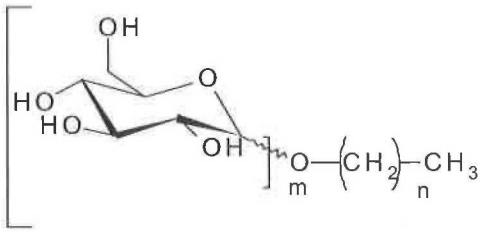
wherein m=1 to 11, and n=1 to 17 and M is at least one metal selected from the group consisting Li, Na, K, and

e) 0.5-90 g/L of a surfactant.

2. The stripping composition according to claim 1 wherein the cloud point booster is the alkylbenzenesulfonate according to formula I.

3. The stripping composition according to one of the preceding claims, said composition having a pH-value of ≥13.

4. The stripping composition according to claim 1, wherein said surfactant is a non-ionic surfactant, preferably a polyglycoside, most preferred a polyglucoside according to formula III



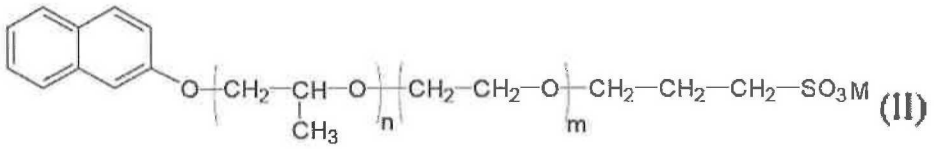
(III)

wherein m=1 to 5, and n=5 to 15.

5. The stripping composition according to claim 1, wherein the composition has a surface tension at 20°C of ≤35 mN/m.

6. The stripping composition according to claim 1, wherein the alkalizing agent is comprised in a concentration of between ≥50 g/l to ≤250 g/l.

7. An aqueous stripping composition for the removal of polymeric surface sealants on metal surfaces, said stripping composition comprising an alkalizing agent, a polymer splitting agent, a swelling agent, and a cloud point booster, wherein said polymer splitting agent is at least one gluconate and wherein said swelling agent is at least one compound selected from the group consisting of glycol ethers and mono-alcohols having 3 to 9 carbon atoms, wherein the cloud point booster is a naphthyl sulfopropyl diether according to formula II



(II)

wherein m=1 to 11, and n=1 to 17 and M is at least one metal selected from the group consisting Li, Na, K.

8. The stripping composition according to claim 7, said composition having a pH value of ≥13.

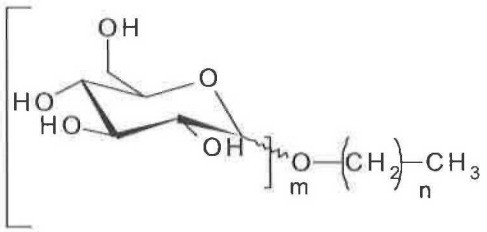
9. The stripping composition according to claim 7, wherein said polymer splitting agent is comprised in a concentration range of between ≥1 g/l to ≤100 g/l.

10. The stripping composition according to claim 7, wherein said swelling agent is comprised in a concentration range of between ≥1 g/l to ≤200 g/l.

11. The stripping composition according to claim 7, wherein said cloud point booster is comprised in a concentration range of between ≥1 g/l to ≤100 g/l.

12. The stripping composition according to claim 7, wherein the composition further contains a surfactant.

13. The stripping composition according to claim 12, wherein the surfactant is a polyglycoside according to formula III



(III)

wherein m=1 to 5, and n=5 to 15.

14. A method for the removal of polymeric surface sealants from a metal surface, the method comprising:
contacting the metal surface having polymeric surface sealants thereon with an aqueous stripping composition, the stripping composition comprising an alkalizing agent, a polymer splitting agent, a swelling agent, and a cloud point booster, wherein said polymer splitting agent comprises at least one gluconate and wherein said swelling agent comprises at least one compound selected from the group consisting of glycol ethers and mono-alcohols having 3 to 9 carbon atoms; and
rinsing the metal surface following contact with the aqueous stripping composition;
wherein the metal surface is a zinc surface, a zinc alloy surface, or a steel surface; and
wherein the polymeric surface sealant is a sealant of the group consisting of polyurethane

sealant, polyethylene sealant, polyethylene wax, polyacryl sealant, polysilicate sealant.

15. The method of claim 14 further comprising reworking the metal surface after said rinsing.

16. The method of claim 15 wherein said reworking comprises plating.

17. The method of claim 14 further comprising dipping the metal surface in a copper sulfate solution to form a black conversion layer thereon after said rinsing.

18. The method of claim 14, wherein the metal surface is contacted by dipping the metal surface in the aqueous stripping composition or by spraying the aqueous stripping composition onto the metal surface.

19. The method of claim 18, wherein the metal surface is contacted with the aqueous stripping composition by dipping the metal surface in the stripping composition, and the metal surface and/or stripping composition are agitated during contact.

20. The method of claim 14, wherein the metal surface is a zinc surface or a zinc alloy surface.

21. The method of claim 20, wherein the metal surface is a passivated or chromated zinc or zinc alloy surface.

22. The method of claim 14, wherein the metal surface is a steel surface.

23. The method of claim 22, wherein the steel surface is chromium plated steel.

24. The method according to claim 14, wherein the metal surface is contacted with the stripping composition at a temperature in a range of between >10°C and <100°C.

25. The method according to claim 14, wherein the metal surface is contacted with the stripping composition for a time of <60min.