Claims

What is claimed is

1. A composition comprising

(i) about 1% to about 10% by weight of one or more polyhydric alcohol;

(ii) about 50% to about 80% by weight of (iia) one or more organic water-soluble glycol ether solvent or (iib) one or more amide selected from diethyl formamide (DEF), N-methylformamide, N-ethylformamide, N,N-dimethylacetamide or N,N-dimethylpropionamide;

(iii) about 0.1% to about 0.5% by weight of a fluoride ion source including one or more of neat ammonium fluoride and neat HF;

(iv) about 1% to about 10% by weight of one or more buffer agent;

(v) about 10% to about 40% by weight of water; and

(vi) optionally one or more corrosion inhibitor,

wherein "about" as used herein corresponds to ±5% of the stated value.

2. The composition of claim 1, wherein the composition has a pH of more than about 3 and less than about 6.

3. The composition of claim 1, wherein the compositions disclosed herein are free of at least one of 4-methylmorpholine N-oxide, trimethylamine N-oxide, peracetic acid, urea, hydrogen peroxide, amidoxime compounds hydroxylamine, hydroxylamine derivatives and metal-containing compounds.

4. The composition of claim 1, wherein the (i) one or more polyhydric alcohol in the disclosed and claimed compositions is from about 1% to about 10% by weight of the composition and is one or more of glycerol, ethylene glycol, propylene glycol, diethylene glycol, dipropylene glycol, hexylene glycol, 1,2-butandiol, 1,4-butandiol and 2,3-butandiol.

5. The composition of claim 1, wherein the (i) one or more polyhydric alcohol consists of about 5% to about 10% by weight of propylene glycol.

6. The cleaning composition of claim 1, wherein the (iia) one or more organic water-soluble glycol ether solvent comprises about 50% to about 60% by weight of diethylene glycol butyl ether (BDG).

7. The composition of claim 1, wherein the composition comprises (iib) one or more amide selected from diethyl formamide (DEF), N-methylformamide, N-ethylformamide, N,N-dimethylacetamide and N,N-dimethylpropionamide.

8. The composition of claim 1, wherein the composition comprises about 50% to about 60% by weight of (iib) diethyl formamide.

9. The composition of claim 1, wherein the composition comprises about 50% to about 60% by weight of (iib) N-methylformamide.

10. The composition of claim 1, wherein the composition comprises about 50% to about 60% by weight of (iib) N,N-dimethylacetamide.

11. The composition of claim 1, wherein the composition comprises about 50% to about 60% by weight of (iib) N,N-dimethylpropionamide.

12. The cleaning composition of claim 1, wherein the (iii) fluoride ion source comprises one or both of neat ammonium fluoride and neat HF.

13. The cleaning composition of claim 1, wherein the (iii) fluoride ion source is neat ammonium fluoride and is from about 0.01 wt% to about 0.5 wt% of the composition.

14. The cleaning composition of claim 1, wherein the (iii) fluoride ion source is neat HF and is from about 0.01 wt% to about 0.15 wt% of the composition.

15. The cleaning composition of claim 1, wherein the (iv) buffer agent is from about 1 wt% to about 10 wt% of the composition and comprises an aqueous solution of ammonium acetate and acetic acid.

16. The cleaning composition of claim 1, wherein the (v) water is from about 10 wt% to about 40 wt% of the composition.

17. The cleaning composition of claim 1, wherein the (vi) one or more corrosion inhibitor comprises from about 0.1 wt% to about 15 wt% of the composition and comprises one or more of benzotriazole, o-tolyltriazole, m-tolyltriazole, and p-tolyltriazole.

18. The cleaning composition of claim 1, wherein the **(i)** polyhydric alcohol consists of about 5% to about 10% by weight of propylene glycol (PG) and the **(ii)** organic water-soluble glycol ether solvent consists of about 50% to about 60% by weight of diethylene glycol butyl ether (BDG).

19. The cleaning composition of claim 1, wherein

the (i) one or more polyhydric alcohol consists of about 5% by weight of propylene glycol (PG);

the (ii) one or more organic water-soluble glycol ether solvent consists of about 58.9% by weight of diethylene glycol butyl ether (BDG);

the (iii) fluoride ion source consists of about 0.28% by weight of neat ammonium fluoride;

the (iv) one or more buffer agent consists of about 2.6% by weight of ammonium acetate and

about 2.0% by weight of acetic acid; and

a balance of the formulation is the (v) water.

20. The cleaning composition of claim 19, wherein the (vi) optional one or more corrosion inhibitor is present and consists of about 1% by weight of benzotriazole.

21. The cleaning composition of claim 1, wherein

the (i) one or more polyhydric alcohol consists of about 10% by weight of propylene glycol (PG);

the (ii) one or more organic water-soluble glycol ether solvent consists of about 53.9% by weight of diethylene glycol butyl ether (BDG);

the (iii) fluoride ion source consists of about 0.28% by weight of neat ammonium fluoride;

the (iv) one or more buffer agent consists of about 2.6% by weight of ammonium acetate and about 2.0% by weight of acetic acid; and

a balance of the formulation is the (v) water.

22. The cleaning composition of claim 21, wherein the (vi) optional one or more corrosion inhibitor is present and consists of about 1% by weight of benzotriazole.

23. The cleaning composition of claim 1, wherein

the (i) one or more polyhydric alcohol consists of about 4% by weight of propylene glycol (PG);

the (iib) diethyl formamide consists of about 58.6% by weight of diethyl formamide;

the (iii) fluoride ion source consists of about 3.5% by weight of neat ammonium fluoride;

the (iv) one or more buffer agent consists of about 2.6% by weight of ammonium acetate and about 2.0% by weight of acetic acid; and

a balance of the formulation is the (v) water.

24. A method for removing a photoresist or similar material from a substrate comprising the steps of:

(i) contacting the substrate with one or more of the photoresist stripper solutions of claim 1 for a time sufficient to remove a desired amount of the photoresist or similar material,

(ii) removing the substrate from the stripping solution,

(iii) rinsing the stripping solution from the substrate with DI water or a solvent, and

(iv) optionally drying the substrate.