CLAIMS

What is claimed is:

1. A remover solution comprising:

(i) at least one organic solvent;

(ii) at least one amine that is free of carboxylic acid moieties;

(iii) water; and

(iv) a corrosion inhibitor including one or more of:

(a) an amino acid;

(b) an azole, and

(c) a phenolic acid,

wherein the remover solution is free of dimethylsulfoxide, N-methylpyrrolidone and dimethylacetamide.

2. The remover solution of claim 1, wherein the at least one organic solvent comprises one or more ether alcohol solvent.

3. The remover solution of claim 1, wherein the at least one organic solvent comprises one or more of diethylene glycol butyl ether (DB), diethylene glycol methyl ether, diethylene glycol ethyl ether, diethylene glycol propyl ether, propylene glycol methyl ether, dipropylene glycol methyl ether, propylene glycol propyl ether, dipropylene glycol propyl ether, propylene glycol phenyl ether, propylene glycol n-butyl ether, dipropylene glycol n-butyl ether, ethylene glycol propyl ether, ethylene glycol butyl ether, ethylene glycol phenyl ether, tripropylene glycol methyl ether, dipropylene glycol dimethyl ether, diethylene glycol methyl ethyl ether, diethylene glycol dimethyl ether, diethylene glycol diethyl ether, diethylene glycol (DEG), dipropylene glycol and propylene glycol phenyl ether (glycol ether PPH).

4. The remover solution of claim 1, wherein the at least one organic solvent comprises from about 20% to about 70% of the remover solution.

5. The remover solution of claim 1, wherein the at least one amine that is free of carboxylic acid moieties comprises one or more alkanolamine.

6. The remover solution of claim 1, wherein the at least one amine that is free of carboxylic acid moieties comprises one or more alkanolamine selected from the group of ethanolamine, N-methylethanolamine, N-ethylethanolamine, N-propylethanolamine, N-butylethanolamine, dimethylethanolamine, diethylethanolamine, diethanolamine, triethanolamine, N-methyldiethanolamine, N-ethyldiethanolamine, isopropanolamine, diisopropanolamine, triisopropanolamine, N-methylisopropanolamine, N-ethylisopropanolamine, N-propylisopropanolamine, 2-aminopropane-1-ol, N-methyl-2-aminopropane-1-ol, N-ethyl-2-

aminopropane-1-ol, 1-aminopropane-3-ol, N-methyl-1-aminopropane-3-ol, N-ethyl-1-aminopropane-3-ol, 1-aminobutane-2-ol, N-methyl-1-aminobutane-2-ol, N-ethyl-1-aminobutane-2-ol, 2-aminobutane-1-ol, N-methyl-2-aminobutane-1-ol, N-ethyl-2-aminobutane-1-ol, 3-aminobutane-1-ol, N-methyl-3-aminobutane-1-ol, N-ethyl-3-aminobutane-1-ol, 1-aminobutane-4-ol, N-methyl-1-aminobutane-4-ol, N-ethyl-1-aminobutane-4-ol, 1-amino-2-methylpropane-2-ol, 2-amino-2-methylpropane-1-ol, 1-aminopentane-4-ol, 2-amino-4-methylpentane-1-ol, 2-aminohexane-1-ol, 3-aminoheptane-4-ol, 1-aminooctane-2-ol, 5-aminooctane-4-ol, 1-aminopropane-2,3-diol, 2-aminopropane-1,3-diol, tris(hydroxymethyl)aminomethane, 1,2-diaminopropane-3-ol, 1,3-diaminopropane-2-ol, 2-(2-aminoethoxy)ethanol, 4-(2-hydroxyethyl)morpholine, 1-(2-hydroxyethyl)piperidine, and 1-(2-hydroxyethyl)piperazine.

7. The remover solution of claim 1, wherein the at least one amine that is free of carboxylic acid moieties comprises one or more alkanolamine selected from the group of N-methylethanolamine, triethanolamine, N-ethylethanolamine, ethanolamine, N-methyldiethanolamine, monoisopropanolamine and aminoethoxyethanol.

8. The remover solution of claim 1, wherein the at least one amine that is free of carboxylic acid moieties comprises from about 10 wt% to about 60 wt% of the remover solution.

9. The remover solution of claim 1, wherein the water comprises from about 5 wt% to about 30 wt% of the remover solution.

10. The remover solution of claim 1, wherein the corrosion inhibitor comprises one or more azole.

11. The remover solution of claim 1, wherein the corrosion inhibitor comprises one or more azole selected from the group of benzotriazole, benzotriazole-5-carboxylic acid,1,2,4-triazole, 5-aminotetrazole, 5-methyl-1H-benzotriazole, 1-hydroxybenzotriazole, 5-amino-l,3,4-thiadiazol-2-thiol, 3-amino-IH-1,2,4 triazole, 3,5-diamino-1,2,4-triazole, tolytriazole, 5-phenyl-benzotriazole, 5-nitro-benzotriazole, 3-amino-5-mercapto-1,2,4-triazole, 1-amino-1,2,4-triazole, 2-(5-amino-pentyl)-benzotriazole, 1-amino-1,2,3-triazole, l-amino-5-methyl-l,2,3-triazole, 3-mercapto-1,2,4-triazole, 3-isopropyl-1,2,4-triazole, 5-phenylthiol-benzotriazole, naphthotriazole, l-H-tetrazole-5-acetic acid, 2-mercaptobenzothiazole (2-MBT), l-phenyl-2-tetrazoline-5-thione, 2-mercaptobenzimidazole (2-MBI), 4-methyl-2-phenylimidazole, 2-mercaptothiazoline, 2,4- diamino-6-methyl-l,3,5-triazine, thiazole, imidazole, benzimidazole, triazine, 5-methyl-1H-benzotriazole, 4-methylbenzotriazole, 1-methylbenzotriazole, 1-methyltetrazole and 5-methyl-1H-tetrazole.

12. The remover solution of claim 1, wherein the corrosion inhibitor comprises one or both of

tolytriazole (TTL) and benzotriazole (BZT).

13. The remover solution of claim 1, wherein the azole comprises from about 0.1 wt % to about 5 wt% of the remover solution.

14. The remover solution of claim 1, wherein the remover comprises

(i) about 30% to about 62% of organic solvent

(ii) about 10% to about 40% of at least one amine that is free of carboxylic acid moieties;

(iii) about 5% to about 30% of water; and

(iv) a corrosion inhibitor comprising one or more of (a) about 0.1% to about 1.5% of an amino acid; (b) about 0.1% to about 1.5% of an azole; and (c) about 0.1% to about 1.5% of a phenolic acid,

wherein the remover solution is free of dimethylsulfoxide, N-methylpyrrolidone and dimethylacetamide.

15. The remover solution of claim 1, wherein the remover comprises

(i) about 30% to about 62% of organic solvent;

(ii) about 10% to about 40% of at least one amine that is free of carboxylic acid moieties;

(iii) about 5% to about 20% of water; and

(iv) about 0.1% to about 1.5% of a corrosion inhibitor including, consisting essentially of or consisting of an azole corrosion inhibitor,

wherein the remover solution is free of dimethylsulfoxide, N-methylpyrrolidone and dimethylacetamide.

16. The remover solution of claim 1, wherein the remover comprises (i) about 50% to about 60% of diethylene glycol monoethyl ether; (ii) about 7.5% to about 12.5% of triethanolamine and about 15% to about 25% of n-methylethanolamine; (iii) about 10% to about 15% of water; and (iv) about 1% to about 1.5% of tolytriazole.

17. The remover solution of claim 1, wherein the remover comprises

(i) about 40% to about 80% of organic solvent.

(ii) about 5 % to about 40% of at least one amine that is free of carboxylic acid moieties;

(iii) about 2% to about 40% of a second amine that is free of carboxylic acid moieties;

(iv) about 5% to about 20% of water; and

(v) about 0.3% to about 1.8% of a corrosion inhibitor including, consisting

essentially of or consisting of an azole corrosion inhibitor,

wherein the remover solution is free of dimethylsulfoxide, N-methylpyrrolidone and dimethylacetamide.

18. A method for removing a photoresist or etch residue from a substrate comprising the steps of:

(i) contacting the substrate with a remover solution of any of claims 1-17 for a time sufficient to remove a desired amount of the photoresist or similar material;

(ii) removing the substrate from the remover solution;

(iii) rinsing the remover solution from the substrate with DI water or a solvent; and

(iv) optionally drying the substrate.