

Patent Claims

1. An electronic device manufacturing aqueous solution comprising
an alkylcarboxylic acid compound (A); and
a solvent (B),
wherein
the alkylcarboxylic acid compound (A) is represented by the
formula (a):
$$A_1\text{-COOH} \quad (a)$$

where A_1 is C_{4-12} alkyl, preferably A_1 is linear or branched
 C_{5-10} alkyl, and
the solvent (B) comprises water.
2. The electronic device manufacturing aqueous solution
according to claim 1, further comprising a hydroxy-containing
compound (C).
3. The electronic device manufacturing aqueous solution
according to claim 1 or 2, wherein the content of the
alkylcarboxylic acid compound (A) is 0.01 to 10 mass %, based
on the electronic device manufacturing aqueous solution:
wherein
preferably, the content of the solvent (B) is 80 to 99.99
mass %, based on the electronic device manufacturing aqueous
solution;
preferably, the content of water contained in the solvent (B) is
80 to 99.99 mass %, based on the electronic device
manufacturing aqueous solution; or
preferably, the content of the hydroxy-containing compound (C)
is 0.001 to 10 mass %, based on the electronic device
manufacturing aqueous solution.
4. The electronic device manufacturing aqueous solution
according to one or more of claims 1 to 3, further comprising a
surfactant (D).

5. The electronic device manufacturing aqueous solution according to one or more of claims 1 to 4, further comprising an additive (E),
wherein

the additive (E) comprises an acid, a base, a germicide, an antibacterial agent, a preservative, a fungicide, or any combination of any of these;

preferably, the additive (E) comprises a base;

preferably, the content of the surfactant (D) is 0.01 to 5 mass %, based on the electronic device manufacturing aqueous solution; or

preferably, the content of the additive (E) is 0.0001 to 10 mass %, based on the electronic device manufacturing aqueous solution.

6. The electronic device manufacturing aqueous solution according to one or more of claims 1 to 5, which is a semiconductor manufacturing aqueous solution:

preferably, the electronic device manufacturing aqueous solution is a semiconductor substrate manufacturing aqueous solution;

preferably, the electronic device manufacturing aqueous solution is a semiconductor substrate manufacturing process cleaning liquid;

preferably, the electronic device manufacturing aqueous solution is a lithography cleaning liquid; or

preferably, the electronic device manufacturing aqueous solution is a resist pattern cleaning liquid.

7. A method for manufacturing a resist pattern using the electronic device manufacturing aqueous solution according to one or more of claims 1 to 6.

8. A method for manufacturing a resist pattern comprising the following steps:

(1) applying a photosensitive resin composition on a substrate

with or without one or more intervening layers, to form a photosensitive resin layer;

(2) exposing the photosensitive resin layer to radiation;

(3) developing the exposed photosensitive resin layer; and

(4) cleaning the developed layer with the electronic device manufacturing aqueous solution according to one or more of claims 1 to 6.

9. The method for manufacturing a resist pattern according to claim 8, wherein the photosensitive resin composition is a chemically amplified photosensitive resin composition, and preferably, exposure is performed using extreme ultraviolet ray.

10. The method for manufacturing a resist pattern according to one or more of claims 7 to 9, wherein the minimum space size of the resist pattern in one circuit unit is 10 to 30 nm.

11. A method for manufacturing a device, comprising the method for manufacturing a resist pattern according to one or more of claims 7 to 10.

12. The method for manufacturing a device according to claim 11, further comprising etching the resist pattern manufactured by the method according to one or more of claims 7 to 10 as a mask, and processing a substrate.

13. The method for manufacturing a device according to claim 11 or 12, further comprising forming a wiring on a processed substrate.