

TABLE 4

| | Eop (mJ/cm ²) | Resolution (nm) | LWR (nm) |
|--------------------------|------------------------------|--------------------|-------------|
| Example 1 | 126 | 39 | 5.5 |
| Example 2 | 112 | 41 | 5.9 |
| Example 3 | 127 | 41 | 5.8 |
| Example 4 | 129 | 39 | 5.6 |
| Example 5 | 136 | 41 | 6.0 |
| Example 6 | 132 | 40 | 5.7 |
| Example 7 | 133 | 40 | 5.6 |
| Example 8 | 119 | 39 | 5.6 |
| Comparative Example 1 | 108 | 43 | 6.3 |
| Comparative Example 2 | 129 | 45 | 6.5 |
| Comparative Example 3 | 131 | 43 | 6.3 |
| Comparative Example 4 | 130 | 44 | 6.3 |

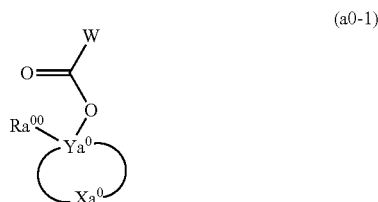
[0672] Based on the results listed in Table 4, it was confirmed that the resist compositions of Examples 1 to 8 to which the present invention had been applied had well-balanced sensitivity, resolution, and LWR, and the resolution and LWR were improved.

[0673] While preferred embodiments of the invention have been described and illustrated above, it should be understood that these are exemplary of the invention and are not to be considered as limiting. Additions, omissions, substitutions, and other modifications can be made without departing from the spirit or scope of the present invention. Accordingly, the invention is not to be considered as being limited by the foregoing description, and is only limited by the scope of the appended claims.

What is claimed is:

1. A resist composition which generates an acid upon exposure and whose solubility in a developing solution is changed due to an action of the acid, the resist composition comprising:

a resin component (A1) whose solubility in a developing solution is changed due to the action of the acid, wherein the resin component (A1) has a constitutional unit (a0) derived from a compound represented by Formula (a0-1) and a constitutional unit (a1) (where a constitutional unit corresponding to the constitutional unit (a0) is excluded) containing an acid decomposable group whose polarity is increased due to the action of the acid.

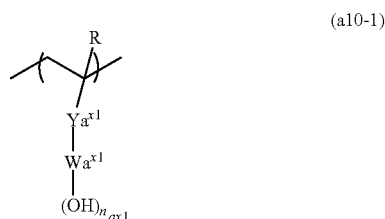


wherein W represents a polymerizable group-containing group, Ya⁰ represents a carbon atom, Xa⁰ represents a group that forms a monocyclic aliphatic hydrocarbon group together with Ya⁰, some or all hydrogen atoms in the monocyclic aliphatic hydrocarbon group may be substituted with substituents, and Ra⁰⁰ represents an aromatic hydrocarbon group which may have a substituent.

2. The resist composition according to claim 1, wherein a ratio (molar ratio) of the constitutional unit (a0) to the constitutional unit (a1) (constitutional unit (a0)/constitutional unit (a1)) is in a range of 8/2 to 1/9.

- 3.** The resist composition according to claim 1, wherein a total content of the constitutional unit (a0) and the constitutional unit (a1) in the resin component (A1) is in a range of 20% to 80% by mole with respect to all constitutional units (100% by mole) constituting the resin component (A1).

4. The resist composition according to claim 1, wherein the resin component (A1) further has a constitutional unit (a10-1) represented by Formula (a10-1),



wherein R represents a hydrogen atom, an alkyl group having 1 to 5 carbon atoms, or a halogenated alkyl group having 1 to 5 carbon atoms, $\text{Y}^{\text{x}1}$ represents a single bond or a divalent linking group, $\text{W}^{\text{x}1}$ represents an $(\text{n}_{\text{ax}1}+1)$ -valent aromatic hydrocarbon group, and $\text{n}_{\text{ax}1}$ represents an integer of 1 or greater.

5. A method of forming a resist pattern, comprising:

forming a resist film on a support using the resist composition according to claim 1;

exposing the resist film; and

developing the exposed resist film to form a resist pattern.

6. The method of forming a resist pattern according to claim 5, wherein, in exposing the resist film, the resist film is exposed to extreme ultraviolet rays (EUV) or electron beams (EB).

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