Each of Y" and Z" independently represents a linear or branched alkyl group in which at least one hydrogen atom has been substituted with a fluorine atom, wherein the alkyl group contains 1 to 10 carbon atoms, preferably 1 to 7 carbon atoms, and more preferably 1 to 3 carbon atoms.

The smaller the number of carbon atoms in the alkylene group for X" or the alkyl group for Y" and Z" within the above-mentioned ranges of the number of carbon atoms, the more the solubility in a resist solvent is improved, and therefore a smaller number of carbon atoms is preferred.

Further, in the alkylene group for X" or the alkyl group for Y" and Z", it is preferable that the number of hydrogen atoms substituted with fluorine atoms is as large as possible, because the acid strength increases and the transparency to high energy radiation of 200 nm or less and electron beams is improved.

The proportion of fluorine atoms within the alkylene group or alkyl group, namely the fluorination ratio, is preferably within a range from 70 to 100%, and more preferably from 90 to 100%. A perfluoroalkylene or perfluoroalkyl group in which all the hydrogen atoms are substituted with fluorine atoms is the most desirable.

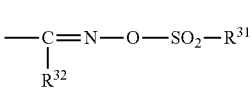
As the onium salt acid generator, onium salts of the above general formula (b-1) or (b-2) in which the anion moiety ($R^{4"}SO_3^-$) has been substituted with R^{α}—COO^- (wherein R^{α} represents an alkyl group or a fluorinated alkyl group) (and in which the cation moiety is the same as that of general formula (b-1) or (b-2)) may also be used.

Examples of R^{α} in the above formula include the same groups as those listed above for $R^{4"}$.

Specific examples of R^{α}—COO^- include a trifluoroacetate ion, an acetate ion, and a 1-adamantanecarboxylate ion.

In the present description, an oxime sulfonate acid generator is a compound having at least one group represented by general formula (B-1) shown below, and has a feature of generating acid upon irradiation (exposure). Such oxime sulfonate acid generators are widely used for chemically amplified resist compositions, and any of these known compounds may be selected as appropriate.

[Chemical Formula 73]



(B-1)

In formula (B-1), each of R^{31} and R^{32} independently represents an organic group.

The organic group for R^{31} and R^{32} refers to a group containing a carbon atom, and may also include atoms other than the carbon atom (such as a hydrogen atom, oxygen atom, nitrogen atom, sulfur atom or halogen atom (such as a fluorine atom or chlorine atom) or the like).

The organic group for R^{31} is preferably a linear, branched or cyclic alkyl group, or an aryl group. The alkyl group or aryl group may have a substituent. There are no particular limitations on the substituent, and examples include a fluorine atom and a linear, branched or cyclic alkyl group having 1 to 6 carbon atoms. The expression that the alkyl group or aryl group "may have a substituent" means that part or all of the hydrogen atoms of the alkyl group or aryl group may each be substituted with a substituent.

The alkyl group for R^{31} preferably has 1 to 20 carbon atoms, more preferably 1 to 10 carbon atoms, still more preferably 1 to 8 carbon atoms, still more preferably 1 to 6 carbon atoms, and most preferably 1 to 4 carbon atoms. As the alkyl group, a partially or completely halogenated alkyl group (hereinafter, sometimes referred to as a "halogenated alkyl group") is particularly desirable. A "partially halogenated alkyl group" refers to an alkyl group in which part of the hydrogen atoms are each substituted with a halogen atom, whereas a "completely halogenated alkyl group" refers to an alkyl group in which all of the hydrogen atoms are substituted with halogen atoms. Examples of the halogen atom include a fluorine atom, chlorine atom, bromine atom or iodine atom, and a fluorine atom is particularly desirable. In other words, the halogenated alkyl group is preferably a fluorinated alkyl group.

The aryl group for R^{31} preferably has 4 to 20 carbon atoms, more preferably 4 to 10 carbon atoms, and most preferably 6 to 10 carbon atoms. As the aryl group, a partially or completely halogenated aryl group is particularly desirable. A "partially halogenated aryl group" refers to an aryl group in which part of the hydrogen atoms are each substituted with a halogen atom, whereas a "completely halogenated aryl group" refers to an aryl group in which all of hydrogen atoms are substituted with halogen atoms.

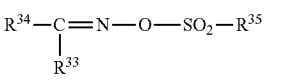
As the organic group for R^{31}, an alkyl group of 1 to 4 carbon atoms which has no substituent, or a fluorinated alkyl group of 1 to 4 carbon atoms is particularly desirable.

The organic group for R^{32} is preferably a linear, branched or cyclic alkyl group, an aryl group, or a cyano group. Examples of the alkyl group and the aryl group for R^{32} include the same alkyl groups and aryl groups as those described above for R^{31}.

As the organic group for R^{32}, a cyano group, an alkyl group of 1 to 8 carbon atoms having no substituent, or a fluorinated alkyl group of 1 to 8 carbon atoms is particularly desirable.

Preferred examples of the oxime sulfonate acid generator include compounds represented by general formula (B-2) or (B-3) shown below.

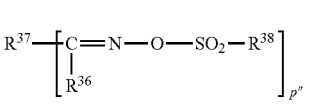
[Chemical Formula 74]



(B-2)

In formula (B-2), R^{33} represents a cyano group, an alkyl group having no substituent or a halogenated alkyl group, R^{34} represents an aryl group, and R^{35} represents an alkyl group having no substituent or a halogenated alkyl group.

[Chemical Formula 75]



(B-3)

In formula (B-3), R^{36} represents a cyano group, an alkyl group having no substituent or a halogenated alkyl group, R^{37} represents a divalent or trivalent aromatic hydrocarbon group, R^{38} represents an alkyl group having no substituent or a halogenated alkyl group, and p" represents 2 or 3.

In general formula (B-2), the alkyl group having no substituent or the halogenated alkyl group for R^{33} preferably has 1 to 10 carbon atoms, more preferably 1 to 8 carbon atoms, and most preferably 1 to 6 carbon atoms.