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1 to 5 carbon atoms;  $R^{81}$  represents an alkyl group;  $R^{82}$  represents a group which forms an aliphatic monocyclic group with the carbon atom to which  $R^{82}$  is bonded;  $R^{83}$  represents a branched alkyl group;  $R^{84}$  represents a group which forms an aliphatic polycyclic group with the carbon atom to which  $R^{84}$  is bonded;  $R^{85}$  represents a linear alkyl group of 1 to 5 carbon atoms;  $R^{15}$  and  $R^{16}$  each independently represents an alkyl group;  $Y^2$  represents a divalent linking group; and  $X^2$  represents an acid dissociable group.

In the formulae, R,  $Y^2$  and  $X^2$  are the same as defined above.

In general formula (a11-0-11), as the alkyl group for  $R^{81}$ , the same alkyl groups as those described above for  $R^{14}$  in formulae (1-1) to (1-9) can be used, preferably a methyl group, an ethyl group or an isopropyl group.

As the aliphatic monocyclic group formed by  $R^{82}$  and the carbon atoms to which  $R^{82}$  is bonded, the same aliphatic cyclic groups as those described above for the aforementioned tertiary alkyl ester-type acid dissociable group and which are monocyclic can be used. Specific examples include groups in which one or more hydrogen atoms have been removed from a monocycloalkane. The monocycloalkane is preferably a 3- to 11-membered ring, more preferably a 3- to 8-membered ring, still more preferably a 4- to 6-membered ring, and most preferably a 5- or 6-membered ring.

The monocycloalkane may or may not have part of the carbon atoms constituting the ring replaced with an ether bond ( $—O—$ ).

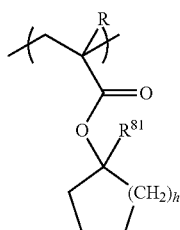
Further, the monocycloalkane may have a substituent such as an alkyl group of 1 to 5 carbon atoms, a fluorine atom or a fluorinated alkyl group of 1 to 5 carbon atoms.

As an examples of  $R^{82}$  constituting such an aliphatic monocyclic group, a linear alkylene group which may have an ether bond ( $—O—$ ) interposed between the carbon atoms can be given.

Specific examples of structural units represented by general formula (a11-0-11) include structural units represented by the aforementioned formulas (a1-1-16) to (a1-1-23), (a1-1-27) and (a1-1-31). Among these, a structural unit represented by general formula (a11-1-02) shown below which includes the structural units represented by the aforementioned formulas (a1-1-16), (a1-1-17), (a1-1-20) to (a1-1-23), (a1-1-27), (a1-1-31), (a1-1-32) and (a1-1-33) is preferable. Further, a structural unit represented by general formula (a11-1-02') shown below is also preferable.

In the formulas, h represents an integer of 1 to 4, and preferably 1 or 2.

[Chemical Formula 51]

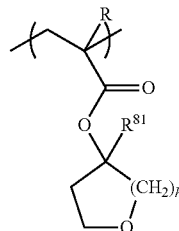


(a11-1-02)

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-continued

(a11-1-02')



In the formulae, R and  $R^{81}$  are the same as defined above; and h represents an integer of 1 to 4.

In general formula (a11-0-12), as the branched alkyl group for  $R^{83}$ , the same alkyl groups as those described above for  $R^{14}$  in formulas (1-1) to (1-9) which are branched can be used, and an isopropyl group is particularly desirable.

As the aliphatic polycyclic group formed by  $R^{84}$  and the carbon atoms to which  $R^{84}$  is bonded, the same aliphatic cyclic groups as those described above for the aforementioned tertiary alkyl ester-type acid dissociable group and which are polycyclic can be used.

Specific examples of structural units represented by general formula (a11-0-12) include structural units represented by the aforementioned formulas (a1-1-1-26) and (a1-1-28) to (a1-1-30).

As the structural unit (a11-0-12), a structural unit in which the aliphatic polycyclic group formed by  $R^{84}$  and the carbon atom to which  $R^{84}$  is bonded is a 2-adamantyl group is preferable, and a structural unit represented by the aforementioned formula (a1-1-26) is particularly desirable.

In general formula (a11-0-13), R and  $R^{84}$  are the same as defined above.

As the linear alkyl group for  $R^{85}$ , the same linear alkyl groups as those described above for  $R^{14}$  in the aforementioned formulas (1-1) to (1-9) can be mentioned, and a methyl group or an ethyl group is particularly desirable.

Specific examples of structural units represented by general formula (a11-0-13) include structural units represented by the aforementioned formulas (a1-1-1), (a1-1-2) and (a1-1-7) to (a1-1-15) which were described above as specific examples of the structural unit represented by general formula (a1-1).

As the structural unit (a11-0-13), a structural unit in which the aliphatic polycyclic group formed by  $R^{84}$  and the carbon atom to which  $R^{84}$  is bonded is a 2-adamantyl group is preferable, and a structural unit represented by the aforementioned formula (a1-1-1) or (a1-1-2) is particularly desirable.

Further, a compound in which the aliphatic polycyclic group formed by  $R^{84}$  and the carbon atom to which  $R^{84}$  is bonded is a "group in which one or more hydrogen atoms have been removed from tetracyclododecane" is also preferable, and a compound represented by the aforementioned formula (a1-1-8), (a1-1-9) or (a1-1-30) is also preferable.

In general formula (a11-0-14), R and  $R^{82}$  are the same as defined above.  $R^{15}$  and  $R^{16}$  are the same as  $R^{15}$  and  $R^{16}$  in the aforementioned general formulae (2-1) to (2-6), respectively.

Specific examples of structural units represented by general formula (a11-0-14) include structural units represented by the aforementioned formulae (a1-1-35) and (a1-1-36) which were described above as specific examples of the structural unit represented by general formula (a1-1).

In general formula (a11-0-15), R and  $R^{84}$  are the same as defined above.  $R^{15}$  and  $R^{16}$  are the same as  $R^{15}$  and  $R^{16}$  in the aforementioned general formulae (2-1) to (2-6), respectively.