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Each of R_{6c} and R_{7c} represents a hydrogen atom or an alkyl group. The alkyl group preferably has 1 to 6 carbon atoms.

Each of R_x and R_y , independently represents an alkyl group, a 2-oxoalkyl group, an alkoxy-carbonylmethyl group, an allyl group or a vinyl group. Each of these atomic groups preferably has 1 to 6 carbon atoms.

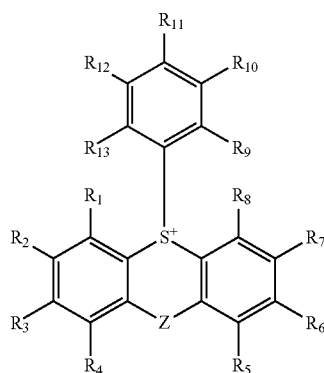
Any two or more of R_{1c} to R_{7c} may be bonded to each other to thereby form a ring structure. R_x and R_y may be bonded to each other to thereby form a ring structure. Each of these ring structures may contain an oxygen atom, a sulfur atom, an ester bond and/or an amido bond.

X^- as a moiety of general formula (ZI-3) is as defined above in connection with general formula (ZI).

As particular examples of the compounds (ZI-3), there can be mentioned compounds shown as examples in sections 0047 and 0048 of JP-A-2004-233661 and sections 0040 to 0046 of JP-A-2003-35948.

Further, compounds (ZI-4) will be described below.

Compounds (ZI-4) are compounds containing any of cations of general formula (ZI-4) below. The compounds (ZI-4) are effective in the suppression of outgassing.



In general formula (ZI-4),

each of R^1 to R^{13} independently represents a hydrogen atom or a substituent. It is preferred for at least one of R^1 to R^{13} to be a substituent containing an alcoholic hydroxyl group. Herein, the term "alcoholic hydroxyl group" means a hydroxyl group bonded to a carbon atom of an alkyl group.

Z represents a single bond or a bivalent connecting group.

When R^1 to R^{13} are substituents containing an alcoholic hydroxyl group, it is preferred for R^1 to R^{13} to represent the groups of the formula $-(W-Y)$, wherein Y represents a hydroxyl-substituted alkyl group and W represents a single bond or a bivalent connecting group.

As preferred examples of the alkyl groups represented by Y, there can be mentioned an ethyl group, a propyl group and an isopropyl group. Most preferably, Y contains the structure of $-CH_2CH_2OH$.

The bivalent connecting group represented by W is not particularly limited. Preferably, W is a single bond or a bivalent group as obtained by replacing with a single bond any hydrogen atom of an alkoxy group, an acyloxy group, an acylamino group, an alkyl- or arylsulfonylamino group, an alkylthio group, an alkylsulfonyl group, an acyl group, an alkoxy-carbonyl group or a carbamoyl group. More preferably, W is a single bond, or a bivalent group as obtained by replacing with a single bond any hydrogen atom of an acyloxy group, an alkylsulfonyl group, an acyl group or an alkoxy-carbonyl group.

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When R^1 to R^{13} represent substituents containing an alcoholic hydroxyl group, the number of carbon atoms contained in each of the substituents is preferably in the range of 2 to 10, more preferably 2 to 6 and most preferably 2 to 4.

Each of the substituents containing an alcoholic hydroxyl group represented by R^1 to R^{13} may contain two or more alcoholic hydroxyl groups. The number of alcoholic hydroxyl groups contained in each of the substituents containing an alcoholic hydroxyl group represented by R^1 to R^{13} is in the range of 1 to 6, preferably 1 to 3 and more preferably 1.

The number of alcoholic hydroxyl groups contained in each of the compounds of general formula (ZI-4) as the sum of those of R^1 to R^{13} is in the range of 1 to 10, preferably 1 to 6 and more preferably 1 to 3.

When R^1 to R^{13} do not contain any alcoholic hydroxyl group, as the substituents represented by R^1 to R^{13} , there can be mentioned, for example, a halogen atom, an alkyl group, a cycloalkyl group, an alkenyl group, a cycloalkenyl group, an alkynyl group, an aryl group, a heterocyclic group, a cyano group, a nitro group, a carboxyl group, an alkoxy group, an aryloxy group, a silyloxy group, a heterocyclic oxy group, an acyloxy group, a carbamoyloxy group, an alkoxy-carbonyloxy group, an aryloxy-carbonyloxy group, an amino group (including an anilino group), an ammonio group, an acylamino group, an aminocarbonylamino group, an alkoxy-carbonylamino group, an aryloxy-carbonylamino group, a sulfamoylamino group, an alkyl- or arylsulfonylamino group, a mercapto group, an alkylthio group, an arylthio group, a heterocyclic thio group, a sulfamoyl group, a sulfo group, an alkyl- or arylsulfinyl group, an alkyl- or arylsulfonyl group, an acyl group, an aryloxy-carbonyl group, an alkoxy-carbonyl group, a carbamoyl group, an aryl- or heterocyclic azo group, an imido group, a phosphino group, a phosphinyl group, a phosphinyloxy group, a phosphinylamino group, a phosphono group, a silyl group, a hydrazino group, a ureido group, a boronic acid group ($-B(OH)_2$), a phosphato group ($-OPO(OH)_2$), a sulfato group ($-OSO_3H$) and any of other substituents known in the art.

When R^1 to R^{13} do not contain any alcoholic hydroxyl group, each of R^1 to R^{13} preferably represents a hydrogen atom, a halogen atom, an alkyl group, a cycloalkyl group, an alkenyl group, a cycloalkenyl group, an alkynyl group, an aryl group, a cyano group, a carboxyl group, an alkoxy group, an aryloxy group, an acyloxy group, a carbamoyloxy group, an acylamino group, an aminocarbonylamino group, an alkoxy-carbonylamino group, an aryloxy-carbonylamino group, a sulfamoylamino group, an alkyl- or arylsulfonylamino group, an alkylthio group, an arylthio group, a sulfamoyl group, an alkyl- or arylsulfonyl group, an aryloxy-carbonyl group, an alkoxy-carbonyl group, a carbamoyl group, an imido group, a silyl group or a ureido group.

When R^1 to R^{13} do not contain any alcoholic hydroxyl group, each of R^1 to R^{13} more preferably represents a hydrogen atom, a halogen atom, an alkyl group, a cycloalkyl group, a cyano group, an alkoxy group, an acyloxy group, an acylamino group, an aminocarbonylamino group, an alkoxy-carbonylamino group, an alkyl- or arylsulfonylamino group, an alkylthio group, a sulfamoyl group, an alkyl- or arylsulfonyl group, an alkoxy-carbonyl group or a carbamoyl group.

When R^1 to R^{13} do not contain any alcoholic hydroxyl group, each of R^1 to R^{13} most preferably represents a hydrogen atom, an alkyl group, a cycloalkyl group, a halogen atom or an alkoxy group.