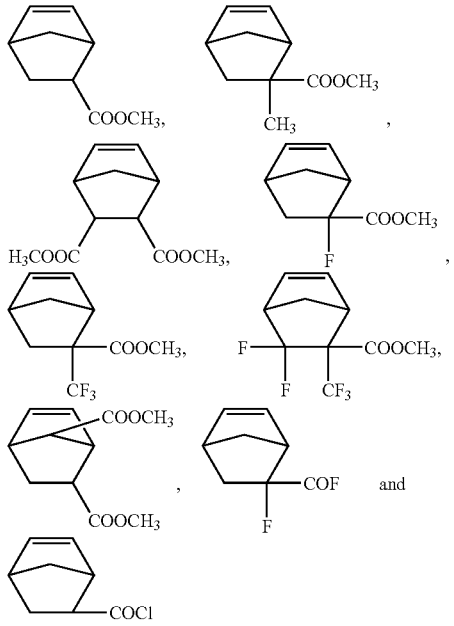
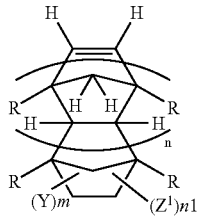
In the norbornene backbone, one X may be present or a plurality of the same or different X bonded to each other may be present.

Y may be replaced with H, F, Cl, an alkyl group or a fluorine-containing alkyl group, and it is particularly preferable that Y is replaced with F or a fluorine-containing alkyl group because transparency can be enhanced in case of use for a resist.

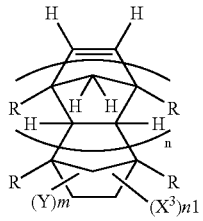
Examples of preferred norbornene derivative to be used as a starting material (formula (1)) are as follows.



The second preparation process of the present invention relates to the process for preparing the fluorine-containing norbornene 20 derivative having a fluorine-containing tertiary alcohol structure represented by the formula (4):

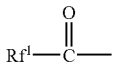


by reacting the norbornene derivative having a ketone structure represented by the formula (3):

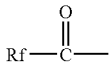


with a fluoroalkylation agent (Rf^2).

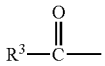
In this preparation process, X^3 in the starting material of the formula (3) is a moiety of ketone structure and may be a fluorine-containing ketone:



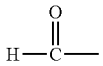
obtained by the above-mentioned first preparation process, or may be a fluorine-containing ketone:



obtained by other preparation process. Also X^3 may be a hydrocarbon type ketone structure:

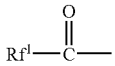


having no fluorine or may be aldehyde:



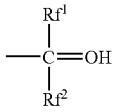
Y is selected from H or the above-mentioned substituent Y and there are preferably the same examples as those of the above-mentioned Y.

Examples of preferred derivative having a fluorine-containing ketone structure:



which is used as the starting material (formula (3)) are the same as those of the norbornene derivative having a fluorine-containing ketone structure obtained by the above-mentioned preparation process.

According to the preparation process of the present invention, a moiety of fluorine-containing tertiary alcohol:



corresponding to the reacted fluoroalkylation agent (Rf^2) can be introduced to the norbornene derivative of a starting material.

Concretely there can be obtained the following norbornene derivatives: