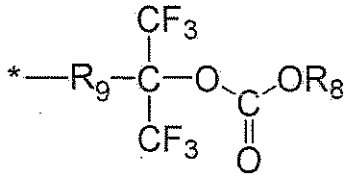


wherein R_1, R_3, R_4, R_5, and R_6 are each independently a hydrogen (H) atom, a fluorine (F) atom, or a substituted or unsubstituted C_1-C_{20} alkyl group,

R_2 is a substituted or unsubstituted C_1-C_{10} alkyl group or a substituted or unsubstituted C_1-C_{10} cyclic alkyl group, wherein at least one hydrogen atom of the alkyl group and the cyclic alkyl group is substituted with a group represented by Formula a below,

R_7 is a hydrogen atom or a substituted or unsubstituted C_1-C_{25} alkyl group,

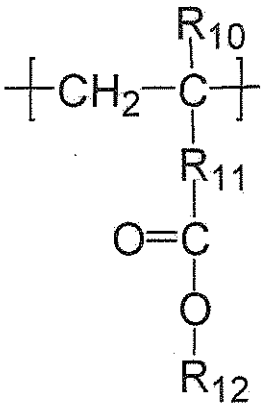
<Formula a>



wherein R_8 is a hydrogen atom or a substituted or unsubstituted C_1-C_{25} alkyl group, R_9 is a single bond or a substituted or unsubstituted C_1-C_{10} alkylene or cycloalkylene group, and * indicates a binding site.

The polymer compound may further include at least one of 10 to 900 parts by mole of a repeating unit represented by Formula 4 below and 1 to 100 parts by mole of a repeating unit represented by Formula 5 below:

<Formula 4>



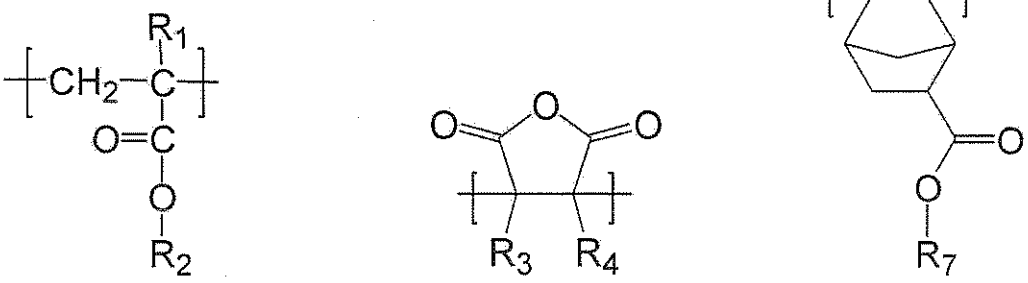
an immersion lithography process as defined aboveof claim 12 on the photoresist film to form a resist protective film; arranging an immersion medium between the resist protective film and a lens; and irradiating radiation to the photoresist film and the resist protective film via the immersion medium and a mask with a predetermined pattern and developing the irradiated films to form a resist pattern.

Hereinafter, a polymer compound according to an embodiment of the present invention and a resist protective film composition for an immersion lithography process including the same will be described in detail.

Expressions such as "at least one of," when preceding a list of elements, modify the entire list of elements and do not modify the individual elements of the list.

According to an embodiment of the present invention, there is provided a polymer compound that includes 100 parts by mole of a repeating unit represented by Formula 1 below; 10 to 900 parts by mole of a repeating unit represented by Formula 2 below; and 10 to 900 parts by mole of a repeating unit represented by Formula 3 below and has a weight average molecular weight of 1,000 to 100,000:

<Formula 1> <Formula 2> <Formula 3>



wherein R_1, R_3, R_4, R_5, and R_6 are each independently a hydrogen (H) atom, a fluorine (F) atom, or a substituted or unsubstituted C_1-C_{20} alkyl group,

R_2 may be a substituted or unsubstituted C_1-C_{10} alkyl group or a substituted or unsubstituted C_1-C_{10} cyclic alkyl group, wherein at least one hydrogen atom of the alkyl group and the cyclic alkyl group may be substituted with a group represented by Formula a below;

R_7 may be a hydrogen atom or a substituted or unsubstituted C_1-C_{25} alkyl group.

<Formula a>