[0139] [Table 3]

	Liquid Chemical for Forming Protective Film					Treatment Time [min]	Treatment Temperature [°C]	Evaluation Results			
	Protective Film Forming Agent	Protective Film Forming Agent Concentration [mass %]	Catalyst	Catalyst Concentration [mass %]	Organic Solvent			Initial Contact Angle [°]	Contact Angle after Surface Treatment [°]	Removability of Protective Film (Contact Angle [°])	Surface Smoothness (ΔRa [nm])
Example 3-1	$C_4F_9(CH_2)_2(CH_3)_2SiCl$	10	-	-	HFE-7100	1	20	<10	91	<10	<0.5
Example 3-2	$C_4F_9(CH_2)_2(CH_3)_2SiCl$	10	-	-	HFE-7100	10	20	<10	97	<10	<0.5
Example 3-3	$C_4F_9C_2H_4Si[N(CH_3)_2]_3$	5	$(CF_3CO)_2O$	3.6	PGMEA	1	20	<10	92	<10	<0.5
Example 3-4	$C_4F_9C_2H_4Si[N(CH_3)_2]_3$	5	$(CF_3CO)_2O$	3.6	PGMEA	10	20	<10	93	<10	<0.5
Comparative Example 3-1	$(CH3)_3SiN(CH_3)_2$	10	-	-	PGMEA	1	20	<10	18	-	-

CLAIMS

[Claim 1] A water repellent protective film forming agent which is able to form a protective film on a wafer that has an uneven pattern at its surface, the protective film being formed at least on surfaces of recessed portions of the wafer at the time of cleaning the wafer, the wafer being a wafer that contains a material including silicon element at least at the surfaces of the recessed portions of the uneven pattern or a wafer that contains at least one kind of material selected from the group consisting of titanium, titanium nitride, tungsten, aluminum, copper, tin, tantalum nitride and ruthenium at least at a part of the surfaces of the recessed portions of the uneven pattern, the agent comprising a silicon compound represented by the following general ~~general~~ formula [3],

$$R^2(CH_3)_2SiX \qquad [3]$$

wherein R^2 represents a C_4-C_{18} hydrocarbon group which is unsubstituted or substituted with halogen atom, X represents at least one group selected from: monovalent functional groups of which element to be bonded to the silicon element is nitrogen; monovalent functional groups of which element to be bonded to the silicon element is oxygen; and halogen groups.