the following general formula [1]:

$$R^1 - \overset{\overset{O}{\|}}{P} - (OH)_a(R^2)_{2-a} \qquad [1]$$

(In the formula [1], R^1 represents a C_1-C_{18} monovalent hydrocarbon group the hydrogen elements of which may partially or entirely be replaced with a fluorine element(s), R^2 mutually independently represents a monovalent organic group having a C_1-C_{18} hydrocarbon group the hydrogen elements of which may partially or entirely be replaced with a fluorine element(s), and "a" is an integer of from 0 to 2.); and

a solvent, ~~comprising water and an alcohol having a carbon number of 6 or less,~~

wherein the solvent comprises both of an alcohol having a carbon number of 6 or less and water,

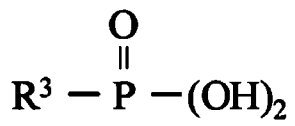
~~wherein~~ the water-repellent protective film forming agent is present in ~~has~~ a concentration of 0.05 to 2 mass% relative to the total amount of 100 mass% of the liquid chemical for forming a water-repellent protective film,

the water is present in ~~water has~~ a concentration of 1 to 75 mass% relative to the total amount of 100 mass% of the solvent,

the alcohol ~~has~~ is present in a concentration of 0.05 to 60 mass% relative to the total amount of 100 mass% of the solvent, and

the total concentration of the alcohol and water is 0.8 to 100 mass% relative to the total amount of 100 mass% of the solvent.

[Claim 2] A liquid chemical for forming a water-repellent protective film, as claimed in claim 1, wherein, the water-repellent protective film forming agent is a compound represented by the following general formula [2].



[2]

(In the formula [2], R^3 represents a C_1-C_{18} monovalent hydrocarbon group the hydrogen elements of which may partially or entirely be replaced with a fluorine element(s).)

[Claim 3] A method of producing a liquid chemical for forming a water-repellent protective film, as claimed in claim 1 or 2, ~~comprising~~characterized by:

a mixing step for mixing the solvent that contains both the alcohol having a carbon number of 6 or less and~~/or~~ water with the water-repellent protective film forming agent, thereby obtaining the liquid chemical for forming a water-repellent protective film.

[Claim 4] A method of producing a liquid chemical for forming a water-repellent protective film, as claimed in claim 1 or 2~~3~~, characterized by ~~wherein, in the~~ mixing the solvent that contains water or the solvent that contains both the alcohol having a carbon number of 6 or less and water with step, ~~the solvent that contains the alcohol having a carbon number of 6 or less and/or water is mixed with~~ a solution where the water-repellent protective film forming agent is dissolved in an alcohol having a carbon number of 6 or less, thereby obtaining the liquid chemical for forming a water-repellent protective film.

[Claim 5] A method of cleaning a wafer having at its surface an uneven pattern and containing at least one kind of element selected from the group consisting of titanium, tungsten, aluminum, copper, tin, tantalum and ruthenium at surfaces of recessed portions of the uneven pattern, ~~wherein~~ the method ~~comprises~~ comprising at least the steps of:

a protective film-forming step for retaining the liquid chemical for forming a protective film as claimed in claim 1 or 2 at least in the recessed portions of the uneven pattern:

a drying step for removing liquid from the uneven pattern by