obtained wafer using a KrF excimer laser scanner (NA 0.80) via an exposure mask. Subsequently, developing was performed by paddling with the organic based developer shown in Table 2 after baking (Post Exposure Bake; PEB) for 60 seconds at the temperatures shown in the following Table 2, then, after rinsing was performed by paddling with the rinsing liquid shown in Table 2, a line and space pattern with lines of 400 nm and a pitch of 600 nm was obtained by rotating the wafer for 30 seconds at a rotational speed of 4000 rpm.

Evaluation Method (Shape of Uneven Substrate)

A cross-sectional shape of the lines of the line and space pattern with lines of 400 nm and a pitch of 600 nm was observed using a scanning electron microscope (S-4800 manufactured by Hitachi, Ltd.) and was evaluated as rectangle, taper shape, or reverse taper shape. The shape of the rectangle is most preferable.

Evaluation Method (Scum on Uneven Substrate)

In the line and space pattern with lines of 400 nm and a pitch of 600 nm, the dissolved resist (scum) remaining in the groove portions on the uneven substrate was observed at a cross-section, and the level of scum was evaluated using five levels. The lower the value, the better the scum performance.

(Determining Criteria)

A: cases where the height of the residue which is present in the groove portion is 0% or more and less than 20% with respect to the depth of the groove portion

B: cases where the height of the residue which is present in the groove portion is 20% or more and less than 40% with respect to the depth of the groove portion

C: cases where the height of the residue which is present in the groove portion is 40% or more and less than 60% with respect to the depth of the groove portion

D: cases where the height of the residue which is present in the groove portion is 60% or more and less than 80% with respect to the depth of the groove portion

E: cases where the height of the residue which is present in the groove portion is 80% or more with respect to the depth of the groove portion

Evaluation Method (EL in Pattern Forming on Uneven Substrate)

The exposure amount which forms the line and space pattern with lines of 400 nm and a pitch of 600 nm was set as the optimum exposure amount, an exposure amount width which allows a pattern size of 400 nm±10% when the exposure amount is changed was determined, and this value was displayed as a percentage by dividing with the optimal exposure amount. The higher the value, the smaller the performance variations due to changes in exposure amount, whereby the exposure latitude (EL) becomes favorable.

Evaluation Method (Execution Method on Flat Substrate)

The resist composition was coated on a silicon wafer where a hexamethyldisilazane (HMDS) process was performed under conditions of 110° C. for 35 seconds without providing an antireflection layer, baking (PreBake; PB) was performed for 60 seconds at the temperatures shown in the following Table 2, and a resist film with a film thickness of 200 nm was formed. Pattern exposure was performed on the obtained wafer using a KrF excimer laser scanner (NA 0.80) via an exposure mask. Subsequently, developing was performed by paddling with the developer after baking (Post Exposure Bake; PEB) for 60 seconds at the temperatures shown in the following Table 2, then, after rinsing was performed by paddling with the rinsing liquid, a line and space pattern with lines of 400 nm and a pitch of 600 nm was obtained by rotating the wafer for 30 seconds at a rotational speed of 4000 rpm.

Evaluation Method (Standing Wave)

A cross-sectional shape of the lines of the line and space pattern with lines of 400 nm and a pitch of 600 nm was observed and the degree of standing waves was evaluated using five levels. In a case where the line width in the portion where the line width is the narrowest due to the influence of the standing waves is set as a and the line width of the portion where reduction in the line width is not seen is set as b, evaluation was performed using the ratio (referred to as "ratio C" below with the units in "%") represented by $\{(b-a)/b\}\times 100$. The smaller the value, the smaller the degree of the standing waves, which is preferable.

(Determining Criteria)

A: cases where the ratio C is 0% or more and less than 20%

B: cases where the ratio C is 20% or more and less than 40%

C: cases where the ratio C is 40% or more and less than 60%

D: cases where the ratio C is 60% or more and less than 80%

E: cases where the ratio C is 80% or more

The above-described evaluation results are shown in the following Table 2.

TABLE 2

	Resist Composition	PB	PEB	Developer	Rinsing Liquid	Shape	Scum	EL/%	Standing Waves
Example-1	Resist-1	100° C. 60 s	100° C. 60 s	ND-1	None	Rectangle	A	22	A
Example-2	Resist-2	100° C. 60 s	100° C. 60 s	ND-1	None	Rectangle	A	22	A
Example-3	Resist-3	100° C. 60 s	110° C. 60 s	ND-1	NR-1	Rectangle	A	19	B
Example-4	Resist-4	100° C. 60 s	100° C. 60 s	ND-1	None	Rectangle	A	19	A
Example-5	Resist-5	100° C. 60 s	100° C. 60 s	ND-1	NR-2	Rectangle	B	19	A
Example-6	Resist-6	100° C. 60 s	100° C. 60 s	ND-1	NR-2	Rectangle	B	17	C
Example-7	Resist-7	100° C. 60 s	110° C. 60 s	ND-2	NR-2	Rectangle	C	17	C
Example-8	Resist-8	100° C. 60 s	100° C. 60 s	ND-2	None	Rectangle	C	17	C
Example-9	Resist-9	100° C. 60 s	110° C. 60 s	ND-3	None	Rectangle	C	17	C
Example-10	Resist-10	100° C. 60 s	110° C. 60 s	ND-3	None	Rectangle	C	17	C
Example-11	Resist-11	100° C. 60 s	100° C. 60 s	ND-1	None	Rectangle	A	25	A