

TABLE D

Time(sec)	% STBPAF6-F Removed ^(a) Solvent (Toluene:Ethanol) ^(b)					
	100:0	80:20	60:40	40:60	20:80	0:100
0	0	0	0	0	0	0
30	90.13	86.28	94.76	76.75	20.45	1.35
60	98.65	97.35	100.87	89.47	25.91	2.25
90	100.45	96.02	101.31	94.30	30.00	-1.35
120	101.79	103.10	101.75	98.25	33.18	1.80
180	101.79	103.10	102.62	97.80	37.27	4.50
300	100.00	99.12	100.00	94.30	37.27	0.00

^(a) STBPAF6-F coated on silicon wafer and soft baked at 25° C. for 18 hrs.^(b) Weight % solutions.

TABLE E

Time(sec)	% STBPAF6-F Removed ^(a) Solvent (Toluene:n-Hexane) ^(b)					
	100:0	80:20	60:40	40:60	20:80	0:100
0	0	0	0	0	0	0
30	90.13	29.55	3.57	2.65	-1.37	-0.45
60	98.65	91.36	15.18	0.88	0.00	-2.27
90	100.45	97.73	59.38	6.64	1.37	-2.73
120	101.79	102.73	85.71	16.81	5.02	0.91
180	101.79	102.73	91.96	22.12	5.94	0.91
300	100.00	100.00	95.09	27.88	1.83	-1.36

^(a) STBPAF6-F coated on silicon wafer and soft baked at 25° C. for 18 hrs.^(b) Weight % solutions.

The following tables, F and G, make a similar comparison using another solvent system and in which the effect of UV radiation on the resin is demonstrated.

TABLE F

Time(sec)	% STBPAF6-F Removed ^(a) Solvent (Cyclohexane:hexane) ^(b)					
	100:0	80:20	60:40	40:60	20:80	0:100
0	0	0	0	0	0	0
30	92.91	97.01	91.45	86.36	68.75	54.68
60	98.65	99.25	95.17	87.76	73.16	58.99
90	98.99	99.63	95.17	87.76	75.74	62.23
180	99.24	99.25	95.17	89.16	78.31	65.11
300	100.00	99.25	96.65	89.86	80.88	67.99

^(a) STBPAF6-F coated on silicon wafer and soft baked at 25° C. for 18 hrs.^(b) Weight % solutions.

TABLE G

Time(sec)	% STBPAF6-F Removed ^(a) Solvent (Cyclohexane:hexane) ^(b)					
	100:0	80:20	60:40	40:60	20:80	0:100
0	0	0	0	0	0	0
30	0.00	-1.09	1.41	1.42	-1.05	-0.69
60	0.00	0.36	-0.35	2.48	-1.40	-1.38
90	0.71	0.73	1.76	2.84	-1.05	-0.69
180	0.71	0.73	1.76	2.48	-1.40	0.00
300	-0.36	0.00	1.41	3.19	-1.75	0.00

^(a) STBPAF-6 coated on silicon wafer and soft baked at 25° C. for 18 hrs., 3 minute cure 300 Watt Mercury Vapor Lamp with quartz/water filter.^(b) Weight % solutions.

EXAMPLE 12

STBPAF6-F resin of Example 7 was dissolved in toluene to yield a solution of composition 58.9% STBPAF6-F and 41.1% toluene. This solution was spin coated onto a silicon surface utilizing spin coating rates from 600 rpm to 2000 rpm for 60 seconds; and soft baked for 24 hours at 25° C. under vacuum. The samples were then exposed for 3 minutes of UV irradiation with a 300 watt mercury lamp employing an USAF Test Pattern and a quartz/water filter. The photocured polymer was then developed with toluene for 1 minute at 25° C. The air dried substrate was hard baked employing a cure cycle under vacuum of 25° C. to 238° C. ramp

in 1 hour, held at 238° C. for 2.5 hours and then cooled to room temperature.

The film thickness and sidewall angle of the photocured polymer was analyzed utilizing a Sloan Technology Corporation Dektak 3030 profilometer.

TABLE H

Spin Speed (rpm)	Film thickness (μm)	Sidewall Angle
600	8.5	40
600	8.5	10
700	8.0	45
700	5.3	27
800	7.5	42
800	6.0	8
1000	7.0	4
1000	6.0	7
1000	6.0	27
1000	6.5	31
1500	6.0	18
1500	11.5	42
1500	3.5	15
2000	4.5	21
2000	2.8	25
2000	4.5	11
2000	4.2	28

EXAMPLE 13

STBPA6-F resin of Example 7 was dissolved in toluene to yield a solution of composition ranging from 41.7% to 72.0% STBPAF6-F and 28.0% to 58.3% toluene. These solutions were spin coated onto a silicon surface utilizing spin coating rates from 700 rpm to 1500 rpm for 60 seconds; soft baked for 24 hours at 25° C. under vacuum. The samples were then exposed for 3 minutes to UV irradiation with a 300 watt mercury lamp employing an USAF Test Pattern and a quartz/water filter. The photocured polymer was then developed with toluene for 1 minute at 25° C. The air dried substrate was hard baked employing a cure cycle under vacuum of 25° C. to 220° C. ramp in 1 hour, held at 220° C. for 2.5 hours and then cooled to room temperature.

The film thickness of the photocured polymer was analyzed employing a Taylor-Hobson Talysurf 10 profilometer.

TABLE I

STBPAF6-F (Wt. %)	Viscosity (mPa s)	Spin Speed (rpm)	Film thickness (μm)
41.7	<4.0	700	3.2
41.7	<4.0	1000	2.7
41.7	<4.0	1500	2.9
50.0	8.0	700	6.5
50.0	8.0	1000	4.8
50.0	8.0	1500	3.9
64.2	22.0	700	12.0
64.2	22.0	1000	9.0
64.2	22.0	1500	8.5
72.0	227.0	1000	20.2
72.0	227.0	1500	15.8

EXAMPLE 14

STBPAF6-F resin of Example 7 was dissolved in toluene to yield a solution of composition ranging from 41.7% to 72.0% STBPAF6-F and 28.0% to 58.3% toluene. This solution was spin coated onto a silicon substrate (surface) utilizing spin coating rates from 700 rpm to 1500 rpm for 60 seconds; soft baked for 24 hours at 25° C. under vacuum. The samples were then exposed for 3 minutes to UV irradiation with a 300 watt mercury