

Components		Example ID Number										
(in grams)												
		44R	63A	63B	63C	63D	63E	63F	63G	63H	63i	63J
DIW		15.00	18.40	18.00	15.80	15.70	12.80	13.20	23.00	23.60	18.70	19.40
	PG	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
L-ascorbic acid		1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Citric acid (27.5%)		2.00	2.00	2.00	2.00	2.00						
TEA		25.00	25.00	25.00	25.00	25.00	28.00	28.00	28.00	28.00	20.00	20.00
HF (5%)		17.00	13.20	13.00	15.90	16.20	15.00	15.00	3.00	3.00	15.00	15.00
HCl (35%)				1.00	0.30							
H2SO4 (98%)			0.40			0.10		1.80		3.40		3.60
acetic acid							2.20		4.00		4.30	
Tolyltriazole												
5% pH of formulation	8.0		7.9	7.9	8.0	8.0	7.8	7.9	7.9	7.9	6.9	6.9
Co Etch Rate [A/min]	4.21		1.54	1.72	1.75	2.71	2.48	2.04	0.51	2.34	3.84	4.29
Cu Etch Rate [A/min]	1.60		1.18	0.72	1.17	0.95	1.05	0.90	0.85	0.62	0.55	0.70

FIGURE 1A

Components		Example ID Number										
(in grams)		63K	63L	63M	63N	63O	63P	63Q	63R	67A	67C	67O
DIW		26.80	27.80	31.00	19.74	20.42	27.63	28.61	31.72	8.72	47.72	52.95
PG		40.00	40.00	40.00	39.00	39.00	39.00	39.00	39.00	39.00		
L-ascorbic acid		2.00	2.00	2.00	1.95	1.95	1.95	1.95	1.95	1.00	1.00	0.90
Citric acid (27.5%)												
TEA		20.00	20.00	20.00	20.50	20.50	20.50	20.50	20.50	30.00	30.00	27.00
HF (5%)		5.00	5.00		14.63	14.63	4.88	4.88		14.63	14.63	13.17
HCl (35%)												
H2SO4 (98%)			5.20			3.51		5.07		6.55	6.55	5.90
acetic acid		6.20		7.00	4.19		6.05		6.83			
Tolyltriazole										0.10	0.10	0.09
5% pH of formulation		6.6	6.6	6.5	7.1	7.2	6.9	7.0	6.9	7.2	7.1	7.4
Co Etch Rate [A/min]		2.70	1.42	1.84	4.07	5.09	3.48	3.87	0.38	0.02	0.07	0.30
Cu Etch Rate [A/min]		0.80	0.76	0.75	0.68	0.87	1.07	1.08	0.77	9.33	3.77	1.10

FIGURE 1B