

# Chemical Solution Monitors

PROCESS	CHEMICAL	Model	Measurement Range (%)				
Particle removal	SC-1 (APM)	CS-131 *	NH <sub>3</sub> 0-1 0-1 0-3 0-0.3 0.2-0.8 0-5 0-2	H <sub>2</sub> O <sub>2</sub> 0-1 0-5 0-7 0.5-1 0.2-0.8 0-10 0-20	H <sub>2</sub> O 98-100 94-100 90-100 98.7-99.5 98.4-99.6 85-100 78-100		
		CS-151	NH <sub>3</sub> 0-0.3 0.5-1.5	H <sub>2</sub> O <sub>2</sub> 0-0.3 0-0.5	H <sub>2</sub> O 99.4-100 98-98.5		
	Alkali / H <sub>2</sub> O <sub>2</sub>	CS-220B	Alkali 0-0.5	H <sub>2</sub> O <sub>2</sub> 0-3	H <sub>2</sub> O 96.5-100		
		CS-139E	TMAH 0-0.5	H <sub>2</sub> O <sub>2</sub> 0-2	H <sub>2</sub> O 97.5-100		
Metallic removal	SC-2 (HPM)	CS-152	HCl 0-2 0-10 0-15	H <sub>2</sub> O <sub>2</sub> 0-2 0-10 0-5	H <sub>2</sub> O 96-100 80-100 80-100		
		AM-1	CS-131	Shown above *			
Post RCA	MC-1 / MC-1-SP	CS-131	Shown above *				
	Reps-203	CS-131	Shown above *				
	SC-1 (APM)	CS-131	Shown above *				
Organic removal	Alkali / H <sub>2</sub> O <sub>2</sub>	CS-220B	Alkali 0-0.5	H <sub>2</sub> O <sub>2</sub> 0-3	H <sub>2</sub> O 96.5-100		
		CS-139E	TMAH 0-0.5	H <sub>2</sub> O <sub>2</sub> 0-2	H <sub>2</sub> O 97.5-100		
	SPM	CS-150 **	H <sub>2</sub> SO <sub>4</sub> 0-1 0-10 10-20 30-60 50-90 70-96 90-98	H <sub>2</sub> O <sub>2</sub> 0-1 0-10 20-30 10-20 0-10 0-5 0-1	H <sub>2</sub> O 98-100 80-100 50-70 20-60 8-50 4-30 2-10		
		CS-152S	HCl 0-5 0-15		H <sub>2</sub> O 95-100 85-100		
		HE-960M	HCl 0-0.5				
		CS-152H	H <sub>2</sub> O <sub>2</sub> 0-10 0-30		H <sub>2</sub> O 90-100 70-100		
		HZ-960	O <sub>3</sub> 0-0.01/0.02/0.04				
	HCl	CS-152S	Shown above				
		HE-960M	Shown above				
	H <sub>2</sub> O <sub>2</sub>	CS-152H	Shown above				
HZ-960		Shown above					
Polysilicon etching	NH <sub>3</sub>	HF-960M	NH <sub>3</sub> 0-0.5				
		CS-131S	NH <sub>3</sub> 0-0.2 0-1 0-5 0-29		H <sub>2</sub> O 99.8-100 99-100 95-100 71-100		
Oxide removal	BHF	CS-137	NH <sub>4</sub> F 0-10 4-5 15-21 15-25 16-18 19-21 19-21 25-30 29-31 32-34 35-38 37-39 39-40	HF 0-3 0.5-1.5 0-3 0-3 0-0.5 4-6 5-8 0-1 5-7 3-5 3-5 1-3 0-0.5	H <sub>2</sub> O 87-100 93.5-95.5 76-85 72-85 81.5-84 73-77 71-76 69-75 62-66 61-65 57-62 58-62 59.5-61		
		CS-153	HF 0-0.5 0-1.5 0-10	H <sub>2</sub> O <sub>2</sub> 0-9 0-1 0-10	H <sub>2</sub> O 90.5-100 97.5-100 80-100		
		CM-210	HF 0-1/2/5/10/20/50				
		HF-960M	HF 0-0.5				
		FPM	CS-150	Shown above **			
			CS-139K	XXXX 0.5-2	H <sub>2</sub> O <sub>2</sub> 1-5	Others 93-99	
		DHF	CM-210	Shown above			
			HF-960M	Shown above			
		Resist removal	SPM	CS-150	Shown above **		
				CS-139K	Shown above		
CLK-888	CS-139K	Shown above					
	CS-133V	H <sub>2</sub> SO <sub>4</sub> 83-93 80-96 HF 0.5-1.5	HF 0-5 1-5 H <sub>2</sub> O 2-4.5	H <sub>2</sub> O 2-17 4-19 H <sub>2</sub> SO <sub>4</sub> 94-98			
BSG removal	H <sub>2</sub> SO <sub>4</sub> / HF	CS-133V	Shown above				
		CS-138	HF 0-5 5-10	H <sub>2</sub> O 0-10 7-12	EG 85-100 78-88		
Oxide / Ni etching	HF / Ethylene glycol	CS-138	Shown above				
		CS-138W	HF 0-5 0-5	EG 85-100 0-10	H <sub>2</sub> O 0-10 85-100		
Al etching	HNO <sub>3</sub> / CH <sub>3</sub> COOH / H <sub>3</sub> PO <sub>4</sub>	CS-139J	HNO <sub>3</sub> 0-5 1-3 1.5-5.5 4-6 4-7 8-13	CH <sub>3</sub> COOH 0-3 8-12 9-11 8-10 7.5-10.5 8-13	H <sub>3</sub> PO <sub>4</sub> 65-75 70-75 65-75 65-70 69-75 60-65		
		CS-153N	HNO <sub>3</sub> 60-70 50-60 57-65 69-70 68.5-70	HF 0-5 5-10 3-8 0-0.5 0-1	H <sub>2</sub> O 25-45 30-45 27-40 29.5-31 29-31		
Polymer removal	HNO <sub>3</sub> / HF	CS-153N	Shown above				
		CS-135B	H <sub>2</sub> O 26-50	A.B.F 3-10	AMINE 45-71		
		CS-135D	H <sub>2</sub> O 10-30	Others 70-90			
		CS-135E	HF 0-0.2	H <sub>3</sub> PO <sub>4</sub> 0.2-5	Others 94.8-99.8		
		CS-139R	ALKALI 2-3	H <sub>2</sub> O <sub>2</sub> 0-3	Others 94-98		
LK-1	CS-135A	H <sub>2</sub> O 90-100	XXX 0-10				
	CS-152N	HNO <sub>3</sub> 5-12 8-10	HCl 15-25 17-21	H <sub>2</sub> O 63-80 69-75			
Others	HNO <sub>3</sub> / HCl	CS-152N	Shown above				
		CS-152N	Shown above				

Notes: ● Please contact HORIBA as to the details of the specifications of each model as well as regarding the possible chemicals and ranges to be measured.  
● Fiber type models are also available for all models in the above list.