CHROME MASK ETCH

Gases	Cl_2	40 sccm
	O_2	10 sccm
	$CHCl_3$	0-5 sccm
Pressure		75mT
R. F.		60-80 watts
d.c. bias		40-80 volt
Susceptor		Al_2O_3
Endpoint		laser

Gas Channels	0-100 Cl_2	(Cl_2)
	0-100 N_2	(O_2)
	0-20 $CHCl_3$	($CHCl_3$)

Chrome etch rate	100-150Å/min.
Selectivity to photo-resist	4:1 (positive p.r.)
Selectivity to substrate	>> 20:1
CD uniformity	0.1μm (3)

POWER

Increase in R.F. power will increase Cr etch rate, but generally at higher power (higher d.c. bias) resist selectivity decreases.

PRESSURE

Pressure is not critical: at lower pressures (higher d.c.) resist selectivity decreases and at higher pressures etch uniformity decreases.

GAS FLOW

Cr etch rate is sensitive to O_2 flow, increasing as O_2 flow increases. At higher flows selectivity to photo-resist decreases. $CHCl_3$ may not be necessary: it's use is determined by type of photo-resist and area of photo-resist coverage.

RESIST TYPE

This process works well with most positive photo-resists. E-beam resists in general give inferior results because Cr/resist etch rates are much lower (1:1).