Arrhenius eq'n

$$K' = A\exp\left(-\frac{E_a}{RT}\right)$$

	sccm	%
DCS	70	
NH_3	200	

Kinetic eq'n

$$J = (8.23\times10^{3}\ J/mol)\exp\left(-\frac{169.4\times10^{3}\ J/mol}{(8.314\ J/K\cdot mol)(1043\ K)}\right) C_A$$

$$= (3.40\times10^{-5}\ J/mol)(10.30\ mol/m^3)$$

$$= 3.50\times10^{-4}\ kg/(m\cdot s)$$

$\frac{kg\cdot m}{s^2}\times\frac{1}{m^3}$

	n (mol)
Si_3N_4	0.0813
$SiCl_2H_2$	0.2439
NH_3	0.813

Ideal gas law

$$V_{SiCl_2H_2} = \frac{nRT_0}{P_0} = \frac{(0.2439\ mol)(82.06\ cm^3\cdot atm/(mol\cdot K))(273\ K)}{1\ atm}$$

$$V_{SiCl_2H_2} = 5464\ cm^3$$

$$V_{NH_3} = \frac{nRT_0}{P_0} = \frac{(0.813\ mol)(82.06\ cm^3\cdot atm/(mol\cdot K))(273\ K)}{1\ atm}$$

$$V_{NH_3} = 18,213\ cm^3$$

$$V_{total} = 23677\ cm^3$$

$$C_{SiCl_2H_2} = \frac{0.2439\ mol}{23677\ cm^3} = 1.03\times10^{-5}\ mol/cm^3$$

$$C_0 = 10.30\ mol/m^3$$