

17. By BET eqn.

$$\frac{P}{V(P_0 - P)} = \frac{1}{V_m C} + \frac{(C-1)P}{V_m C P_0}$$

$$\Rightarrow \frac{1}{V\left(\frac{P_0}{P} - 1\right)} = \frac{1}{V_m C} + \frac{(C-1)P}{V_m C P_0}$$

$\frac{P}{P_0}$	0.04	0.1	0.16	0.25	0.3	0.37
$V \text{ (cm}^3/\text{g)}$	0.33	0.46	0.54	0.64	0.7	0.77
$\frac{1}{V\left(\frac{P_0}{P} - 1\right)}$	$\frac{1}{0.33\left(\frac{1}{0.04} - 1\right)}$	$\frac{1}{0.46\left(\frac{1}{0.1} - 1\right)}$	$\frac{1}{0.54\left(\frac{1}{0.16} - 1\right)}$	$\frac{1}{0.64\left(\frac{1}{0.25} - 1\right)}$	$\frac{1}{0.7\left(\frac{1}{0.3} - 1\right)}$	$\frac{1}{0.77\left(\frac{1}{0.37} - 1\right)}$
	1.901	4.14	2.835	1.901	1.633	1.311
	0.126	0.242	0.353	0.521	0.612	0.726

Plot $\frac{1}{V\left(\frac{P_0}{P} - 1\right)}$ (y) v.s. $\frac{P}{P_0}$ (x)

$$y = 0.049 + 1.901x \Rightarrow \begin{cases} \frac{1}{V_m C} = 0.049 \\ \frac{C-1}{V_m C} = 1.901 \end{cases}$$

$$\Rightarrow C-1 = \frac{1.901}{0.049} = 38.8 \Rightarrow C = 39.8 \Rightarrow V_m = \frac{1}{0.049 \times 39.8} = 0.513 \frac{\text{cm}^3}{\text{g}}$$

at S.T.P. $0.513 / 22.4 \times 10^3 = 2.29 \times 10^{-5} \text{ (mol/g)}$

$$2.29 \times 10^{-5} \times 6 \times 10^{23} = 13.74 \times 10^{18} \text{ g} = 1.374 \times 10^{19} \text{ g}$$

比表面積 $= \frac{6.5}{1.9} = 4.73 \times 10^{-19} \text{ m}^2/\text{g}$