

## LIST OF SYMBOLS

SYMBOL		UNIT
$a_m$	Projection area per molecule (0.162 nm <sup>2</sup> /molecule)	
$C$	Constant specified by each gas	[-]
$D$	Average pore diameter	[Å]
$d$	Spacing between atomic layers in crystal	[Å]
$d_{XRD}$	The crystallite size of sample powder	[Å]
$k$	Scherrer's constant ranging from 0.7 to 1.71.	[-]
$N_{AV}$	Avogadro number (6.02 x 10 <sup>23</sup> )	[-]
$P$	Vapor pressure	[mmHg]
$P_0$	Saturated pressure	[mmHg]
$S$	Surface area	[m <sup>2</sup> /g]
$S_{BET}$	BET surface area	[m <sup>2</sup> /g]
$S_{me}$	Mesopore surface area	[m <sup>2</sup> /g]
$S_{mi}$	Micropore surface area	[m <sup>2</sup> /g]
$t$	Statistical adsorbed film thickness	[Å]
$V$	Volume	[cm <sup>3</sup> ]
$V_m$	Volume of N <sub>2</sub> adsorbed when the entire adsorbent surface is covered with a complete unimolecular layer	[cm <sup>3</sup> ]
$V_{me}$	Mesopore volume	[cc/g]
$V_{mi}$	Micropore volume	[cc/g]
$\Delta H_A$	Heat of adsorption	[kJ/mol]
$\Delta H_L$	Heat of liquefaction	[kJ/mol]
$\lambda$	Incident X-ray wavelength	[Å]

$\theta$	The angle between the incidence ray and the scattering plane	[°]
	The diffraction angle for the (111) plane	[°]
$\beta$	half height width of the characteristic peak	[°]