

NOTATION

a	inner radius of diffusion tube, also general constant in equation 5.3
A	roughness factor
C	correction factor to Enskog theory
De	Dean number
D_o	pre-exponential factor
D_{12}^0	mutual diffusion coefficient at infinite dilution
D_{12}	strictly the mutual diffusion coefficient, but used as D_{12}^0
D_{11}, D_{22}	self diffusion coefficients
D_1^*, D_2^*	tracer diffusion coefficients
E	observed activation energy
$g(\sigma_{12})$	pair radial distribution function
ΔG_D	free energy of activation for diffusion
h	Planck constant
k	Boltzmann constant
K	effective Taylor dispersion coefficient
L	dispersion tube length
M	molecular weight
m	mass of single molecule
\dot{m}	mass flow rate
n	number density (molecules/volume)
N	Avogadro's number
P	pressure
Q	volumetric flow rate
r	radial coordinate

R_g	gas constant
R	inner radius of diffusion tube
R_c	radius of coil
S	zeroth moment
Sc	Schmidt number
t	time
\bar{t}	first moment, retention time in diffusion tube
T	absolute temperature
\bar{u}	mean solvent velocity
V	solvent molar volume, also voltage in Eq. 4.12
V_D	molar volume intercept from RHS theory
V_c	solvent molar volume at the critical point
V_o	solvent close-packed hard sphere volume
x	molar concentration
z	fixed axial coordinate
Z_1	axial coordinate moving with mean velocity of flow

Superscripts

HSG	hard sphere gas
RHS	rough hard sphere

Subscripts

a	average
b	at the normal boiling point
1	solute; or condition 1
2	solvent; or condition 2
obs	observed

Greek Letters

α	thermal expansion coefficient
β	constant in Equation (3.15)
ζ	frictional resistance coefficient
η	viscosity
λ	diffusional jump distance
ξ	packing fraction for hard spheres
ρ	density
σ	molecular diameter
σ^2	variance of response curve
ϕ	association parameter