

## Acknowledgments

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## List of Symbols

$\dot{\gamma}$	Shear rate
$\nu$	Slope of power law region
$\theta$	$T-T_s$
$\sigma_\infty$	Tensile strength at infinite molecular weight
$\eta^*$	Complex viscosity
$\rho_0$	Polymer density
$\eta_0$	Zero shear rate viscosity
$[P_n]$	Concentration of polymer with chain length $n$
$[R\cdot_n]$	Concentration of free radical with chain length $n$
$\alpha$	3.4
$A$	Constant
$A$	Pre-exponential factor
$A_1, A_2$	Constants of a polynomial
$a_2$	Polydispersity exponent
$A_R$	Area between the curves (ln reaction rate versus $T$ ) for two heating rates
$a_T, b_T$	Shift factors
$A_W$	Area between the curves (ln weight versus $T$ ) for two heating rates
$B$	Constant
$C$	Constant
$C_1, C_2$	Williams-Landel-Ferry constants
$\lambda$	Characteristic relaxation time
$D$	Constant
$\tau$	Degree of degradation
$E_a$	Activation energy
$f$	Fractional conversion
$\alpha$	Fractional conversion
$\omega$	Frequency
$G''$	Shear loss modulus
$G'$	Shear storage modulus
$g(\alpha)$	Function defined as $\int_0^\alpha \frac{d\alpha}{f(\alpha)}$
$G_N^0$	Plateau modulus
$H(\tau)$	Normalized relaxation spectrum
$\beta$	Heating rate
$I$	$\int_W^{W_0} \frac{dW}{W^n}$
$J(z)$	Tabulated quantity
$K$	Constant
$k$	Reaction rate constant
$K', K''$	Constants
$M$	Polymer molecular weight
$m_0$	Monomer molecular weight
$\bar{M}_n$	Number average molecular weight, $\sum \frac{n_i M_i}{n_i}$
$M_c$	Critical (entanglement) molecular weight
$M_c$	Molecular weight between entanglements
$M_T$	Threshold molecular weight, $\cong M_c^{1.5}$

$\bar{M}_w$	Weight average molecular weight, $\sum \frac{n_i M_i^2}{n_i M_i}$
$\bar{M}_v$	Viscosity average molecular weight
n	Order of reaction
P	Property
$P_\infty$	Property at infinite molecular weight
q	Polydispersity
r	Chain length
R	Gas constant
$\omega$	Relative mass of sample residue
$R_t$	$d\alpha/dt$
$R_T$	$d\alpha/dT$
S	$\frac{dW_c}{d\frac{1}{T}}$
S	Stationary point at maximum of thermogram
S(z)	Tabulated quantity
$T_\infty$	Vogel temperature
$t_{1/2}$	Time where $\alpha = 0.5$
$\sigma$	Tensile strength
$T_g$	Glass transition temperature
$T_g^\infty$	$T_g$ at infinite molecular weight
$T_m$	Temperature where the reaction rate is at a maximum
$t_{red}$	Reduced time
$T_s$	Temperature where $W/W_0 = 1/e$
TS	Tensile strength
$TS_\infty$	Tensile strength at infinite molecular weight
$V_{max}$	Maximum of the thermogram
W	Weight of polymer
$W_n(\log M)$	Weight fraction of polymer with log M
X	$\left(\frac{\dot{\gamma}}{\dot{\gamma}_c}\right)^{v/\alpha}$
Y	$\left(\frac{\eta}{\eta_0}\right)^{1/\alpha}$
$Z_w$	Weight average chain length