FULL INITIATION

Activation: $Q \underset{k_{-l}}{\overset{h\nu,\, k_l}{\rightleftharpoons}} {}^3Q$

$\mathbf{k_l}$	$\approx$ 1e8 - 1e10	c^{-1}
$\mathbf{k_{-l}}$	$\approx$ 1e5 - 1e6	c^{-1}

Quenching:

$${}^3Q + DH \xrightarrow{k_{diff}} [{}^3Q, DH] \underset{k_{-qE}}{\overset{k_{qE}}{\rightleftharpoons}} [Q^{\bullet -}, DH^{\bullet +}]_s \xrightarrow{k_{H+}} [QH^{\bullet}, D^{\bullet}]_s \xrightarrow{k_{diff}} QH^{\bullet} + D^{\bullet}$$

$$[Q^{\bullet -}, DH^{\bullet +}]_s \xrightarrow{k_{diff}} Q_s^{\bullet -} + DH_s^{\bullet +}$$

$\mathbf{k_{qE}}$	$\approx$ 1e8 - 1e10	$M^{-1}c^{-1}$
$\mathbf{k_{-qE}}$	$\approx$ 1e7 - 1e9	c^{-1}
$\mathbf{k_{H+}}$	$\approx$ 1e8 - 1e10	c^{-1}
$\mathbf{k_{diff}}$	$\approx$ 1e8 - 1e9	c^{-1}

$${}^3Q + QHH \xrightarrow{k_{qH}} 2QH^{\bullet} \underset{k_{redQ}}{\overset{k_{dQ}}{\rightleftharpoons}} Q + QHH$$

$\mathbf{k_{qH}}$	$\approx$ 1e5 - 1e9	$M^{-1}c^{-1}$
$\mathbf{k_{redQ}}$	$\approx$ 1e3	$M^{-1}c^{-1}$
$\mathbf{k_{dQ}}$	$\approx$ 1e9	$M^{-1}c^{-1}$

Radicals:

$$QH^{\bullet} + D^{\bullet} \xrightarrow{k_r} QHD \xrightarrow{k_p} QHH + \text{N-prod}$$

$\mathbf{k_r}$	$\approx$ 1e7 - 1e9	$M^{-1}c^{-1}$
$\mathbf{k_p}$	$\approx$ 1e-5 - 1e-3	c^{-1}

$$2D^{\bullet} \xrightarrow{k_{rD-rec}} \text{D-D}$$

$$2D^{\bullet} \xrightarrow{k_{rD-dis}} \text{DH + N-prod}$$

$\mathbf{k_{rD-rec}}$	$\approx$ 1e10	$M^{-1}c^{-1}$
$\mathbf{k_{rD-dis}}$	$\approx$ 1e9	$M^{-1}c^{-1}$

Photolysis: ${}^3Q \xrightarrow{k_{Ph}} \text{prod}$

$\mathbf{k_{Ph}}$	$\approx$ 1e-4 - 1e-3	c^{-1}

SIMPLE SYSTEM

Activation: $Q \xrightarrow{h\nu,\, k_l} {}^3Q$

$\mathbf{k_l}$	$\approx$ 0.1	c^{-1}

Quenching: ${}^3Q + DH \xrightarrow{k_{diff}} QH^{\bullet} + D^{\bullet} \xrightarrow{k_r} \text{QHD} \xrightarrow{k_p} \text{QHH + N-prod}$

$\mathbf{k_{diff}}$	$\approx$ 1e8 - 1e10	$M^{-1}c^{-1}$
$\mathbf{k_r}$	$\approx$ 1e7 - 1e9	$M^{-1}c^{-1}$
$\mathbf{k_p}$	$\approx$ 1e-5 - 1e-3	$M^{-1}c^{-1}$

Radicals:

$$2QH^{\bullet} \xrightarrow{k_{dQ}} Q + QHH$$

$\mathbf{k_{dQ}}$	$\approx$ 1e9	$M^{-1}c^{-1}$

$$2D^{\bullet} \xrightarrow{k_{rD-rec}} \text{D-D}$$

$$2D^{\bullet} \xrightarrow{k_{rD-dis}} \text{DH + N-prod}$$

$\mathbf{k_{rD-rec}}$	$\approx$ 1e10	$M^{-1}c^{-1}$
$\mathbf{k_{rD-dis}}$	$\approx$ 1e9	$M^{-1}c^{-1}$

FULL POLIMERIZATION

Initiation:	$D^{\bullet}$+ M $\xrightarrow{k_{init}}$ $\sim P_1^{\bullet}$	$\mathbf{k_{init}}$	$\approx$ 1e2 - 1e4	$M^{-1}c^{-1}$
Propagation:	$\sim P_n^{\bullet}$ + M $\xrightarrow{k_{prop}}$ $\sim P_{n+1}^{\bullet}$	$\mathbf{k_{prop}}$	$\approx$ 1e2 - 1e4	$M^{-1}c^{-1}$
	$M^{\bullet}$ + M $\xrightarrow{k_{prop}}$ $\sim P_2^{\bullet}$			
Transfer:	$\sim P_n^{\bullet}$ + Sol $\xrightarrow{k_{trans-sol}}$ $Sol^{\bullet}$ + $\sim P_n$	$\mathbf{k_{trans-sol}}$	$\approx$ 5	$M^{-1}c^{-1}$
	$\sim P_n^{\bullet}$ + M $\xrightarrow{k_{trans-m}}$ $M^{\bullet}$ + $\sim P_n$	$\mathbf{k_{trans-m}}$	$\approx$ 1e-3 - 1	$M^{-1}c^{-1}$
Inhibition:	$\sim P_n^{\bullet}$ + Z $\xrightarrow{k_{inh}}$ $Z^{\bullet}$ + $\sim P_n$	$\mathbf{k_{inh}}$	$\approx$ 1e2 - 1e3	$M^{-1}c^{-1}$
Termination:	$\sim P_n^{\bullet}$ $\xrightarrow{k_{ter-lin}}$ $\sim P_n$	$\mathbf{k_{ter-l}}$	≈ 0	c^{-1}
	$\sim P_n^{\bullet}$ + $\sim P_k^{\bullet}$ $\xrightarrow{k_{ter-rec}}$ $\sim P_n$–$P_k\sim$	$\mathbf{k_{ter-rec}}$	$\approx$ 1e7 - 1e8	$M^{-1}c^{-1}$
	$\sim P_n^{\bullet}$ + $\sim P_k^{\bullet}$ $\xrightarrow{k_{ter-disp}}$ $\sim P_{n-1}$=CH_2 + $\sim P_{k-1}$-CH_3	$\mathbf{k_{ter-disp}}$	$\approx$ 1e7 - 1e8	$M^{-1}c^{-1}$

SIMPLE POLIMERIZATION

Initiation:	$D^{\bullet}$+ M $\xrightarrow{k_{prop}}$ $\sim P^{\bullet}$	$\mathbf{k_{prop}}$	$\approx$ 1e2 - 1e4 $M^{-1}c^{-1}$
Propagation:	$\sim P^{\bullet}$ + M $\xrightarrow{k_{prop}}$ $\sim P^{\bullet}$		
Inhibition:	$\sim P^{\bullet}$ + Z $\xrightarrow{k_{inh}}$ $Z^{\bullet}$ + $\sim P$	$\mathbf{k_{inh}}$	$\approx$ 1e2 - 1e3 $M^{-1}c^{-1}$
Transfer:	$\sim P^{\bullet}$ + Sol $\xrightarrow{k_{trans-sol}}$ $Sol^{\bullet}$ + $\sim P$	$\mathbf{k_{trans-sol}}$	$\approx$ 5 $M^{-1}c^{-1}$
	$\sim P^{\bullet}$ + M $\xrightarrow{k_{trans-m}}$ $M^{\bullet}$ + $\sim P$	$\mathbf{k_{trans-m}}$	$\approx$ 1e-3 - 1 $M^{-1}c^{-1}$
Termination:	$\sim P^{\bullet}$ + $\sim P^{\bullet}$ $\xrightarrow{k_{ter-rec}}$ $\sim P$	$\mathbf{k_{ter-rec}}$	$\approx$ 1e7 - 1e8 $M^{-1}c^{-1}$