## Supplement to Technical Note: Effect of varying $\lambda = 185$ and 254 nm photon flux ratios on radical generation in oxidation flow reactors

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Figure S1. Simplified schematic of experimental setup used in this study.



Figure S2. Photo to of lamp type B used in this study. Heat shrink tubing applied to the external surface of the Hg lamp quartz caused equivalent reduction in  $I_{185}$  and  $I_{254}$ .



**Figure S3.**  $OH_{exp}$  calculated from the estimation equation (Eq. 1) as a function of  $OH_{exp}$  calculated from the full OFR185 KinSim mechanism (Table S1) for lamp types (a) E, (b) D and G, (c) C and F, and (d) A and B. Solid and dashed lines correspond to the 1:1 and the 1:2 and 2:1 lines, respectively. Estimation equation fit coefficients are shown in Table 1.



**Figure S4.** Concentrations of (a) OH, (b) HO<sub>2</sub>, (c) NO, and (d) NO<sub>2</sub> as a function of  $I_{185}$  and OHR<sub>ext</sub> calculated using the OFR185 KinSim mechanism at the following base case OFR185 conditions: [H<sub>2</sub>O] = [N<sub>2</sub>O] = 2%,  $I_{254} = 3.2 \times 10^{15}$  photons cm<sup>-2</sup> s<sup>-1</sup>, and  $\tau_{OFR} = 124$  s.

Reactant 1         Reactant $O(^1D)$ $H_2O$ $O(^1D)$ $N_2$ $O(^1D)$ $O(2$ $O(^1D)$ $O_2$ $O(^1D)$ $O_2$ $O(^1D)$ $O_2$ $O(^1D)$ $O_3$ $O(^1D)$ $O_3$ $O(^1D)$ $H_2$ $O(^3P)$ $HQ_2$ $O(^3P)$ $H_2O_2$ $O(^3P)$ $H_2O_2$ $O(^3P)$ $H_2O_2$ $O(^3P)$ $H_3$ $OH$ $O_3$ $HO_2$ $O_3$ $HO_2$ $O_3$ $HO_2$ $O_3$ $HO_2$ $O_3$ $OH$ $HO_2$ $H$ $HO_2$ $H$ $HO_2$ $H$ $HO_2$ $OH$ $H_2$ $OH$ $H_2$ $OH$ $OH$ $OH$ $OH$ $OH$ $OH$ $OH$ $OH$ $OH$ <td< th=""><th><math display="block">\begin{array}{c c} 2 &amp; Product 1 \\ &amp; OH \\ &amp; O(^{3}P) \\ &amp; O(^{3}P) \\ &amp; O(^{3}P) \\ &amp; O(^{3}P) \\ &amp; O_{2} \\ &amp; O_{2} \\ &amp; OH \\ &amp; O_{2} \\ &amp; OH \\ &amp; OH \\ &amp; O_{2} \\ &amp; OH \\ &amp; OH \\ &amp; OH \\ &amp; HO_{2} \\ &amp; OH \end{array}</math></th><th><math display="block">\begin{array}{c c} Product 2 \\ \hline OH \\ N_2 \\ CO_2 \\ O_2 \\ O_2 \\ O_2 \\ O_2 \\ O_2 \\ HC_2 \\ HO_2 \\ HO_2 \\ O_2 </math></th><th>Product 3</th><th><math display="block">\begin{array}{c} A_{\infty} \\ 1.63E\text{-}10 \\ 2.15E\text{-}11 \\ 7.5E\text{-}11 \\ 3.3E\text{-}11 \\ 1.2E\text{-}10 \\ 1.2E\text{-}10 \\ 1.2E\text{-}10 \\ 1.2E\text{-}10 \\ 1.8E\text{-}11 \\ 3E\text{-}11 \\ 3E\text{-}11 \\ 3E\text{-}11 \\ 3E\text{-}12 \\ 8E\text{-}12 \end{array}</math></th><th><math display="block">\begin{array}{c} E_{\infty} \\ -60 \\ -110 \\ -115 \\ -55 \\ 0 \\ 0 \\ 0 \\ 0 \\ -120 \\ -200 \\ 2000 \end{array}</math></th><th><math>\begin{array}{c} n_{\infty} \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ </math></th><th>A<sub>0</sub> 0 0 0 0 0 0 0 0 0 0 0 0</th><th>E<sub>0</sub> 0 0 0 0 0 0 0 0 0 0</th><th>n<sub>0</sub>           0</th><th>Fc         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0</th><th>f_0       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1</th><th>g 0 0 0 0 0 0 0 0 0</th></td<>	$\begin{array}{c c} 2 & Product 1 \\ & OH \\ & O(^{3}P) \\ & O(^{3}P) \\ & O(^{3}P) \\ & O(^{3}P) \\ & O_{2} \\ & O_{2} \\ & OH \\ & O_{2} \\ & OH \\ & OH \\ & O_{2} \\ & OH \\ & OH \\ & OH \\ & HO_{2} \\ & OH \end{array}$	$\begin{array}{c c} Product 2 \\ \hline OH \\ N_2 \\ CO_2 \\ O_2 \\ O_2 \\ O_2 \\ O_2 \\ O_2 \\ HC_2 \\ HO_2 \\ HO_2 \\ O_2 $	Product 3	$\begin{array}{c} A_{\infty} \\ 1.63E\text{-}10 \\ 2.15E\text{-}11 \\ 7.5E\text{-}11 \\ 3.3E\text{-}11 \\ 1.2E\text{-}10 \\ 1.2E\text{-}10 \\ 1.2E\text{-}10 \\ 1.2E\text{-}10 \\ 1.8E\text{-}11 \\ 3E\text{-}11 \\ 3E\text{-}11 \\ 3E\text{-}11 \\ 3E\text{-}12 \\ 8E\text{-}12 \end{array}$	$\begin{array}{c} E_{\infty} \\ -60 \\ -110 \\ -115 \\ -55 \\ 0 \\ 0 \\ 0 \\ 0 \\ -120 \\ -200 \\ 2000 \end{array}$	$\begin{array}{c} n_{\infty} \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ $	A <sub>0</sub> 0 0 0 0 0 0 0 0 0 0 0 0	E <sub>0</sub> 0 0 0 0 0 0 0 0 0 0	n <sub>0</sub> 0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0	Fc         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0           0         0	f_0       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1	g 0 0 0 0 0 0 0 0 0
$\begin{array}{ c c c c c }\hline O(^1D) & H_2O \\ \hline O(^1D) & N_2 \\ \hline O(^1D) & CO_2 \\ \hline O(^1D) & O_2 \\ \hline O(^1D) & O_3 \\ \hline O(^1D) & O_3 \\ \hline O(^1D) & H_2 \\ \hline O(^3P) & OH \\ \hline O(^3P) & OH \\ \hline O(^3P) & HO_2 \\ \hline O(^3P) & HO_2 \\ \hline O(^3P) & H_2O_2 \\ \hline O(^3P) & HO_2 \\ \hline O(^3P) & O_3 \\ \hline H & O_3 \\ \hline OH & O_3 \\ \hline HO_2 & NO \\ \hline HO_2 & O_3 \\ \hline OH & HO_2 \\ \hline H & HO_2 \\ \hline OH & H_2 \\ \hline OH & OH \\ \hline NO & O_3 \\ \hline NO_2 & O_3 \\ \hline \end{array}$	OH           O( <sup>3</sup> P)           O( <sup>3</sup> P)           O( <sup>3</sup> P)           O2           O2           O4           O2           O4           O2           O4           O2           O4           O4           O5           O4           O5           O4           O5           O4           O5           O4           O4           O4           O4           O4           O4           O4           O4           O4           HO2           O4	$\begin{array}{c c} OH \\ N_2 \\ CO_2 \\ O_2 \\ O_2 \\ O_2 \\ O(^3P) \\ H \\ H \\ H \\ O_2 \\ HO_2 \\ O_2 \\$	O( <sup>3</sup> P)	1.63E-10 2.15E-11 7.5E-11 3.3E-11 1.2E-10 1.2E-10 1.2E-10 1.8E-11 3E-11 1.4E-12 8E-12	-60 -110 -115 -55 0 0 0 0 -120 -200 2000	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 0 0 0 0 0
$\begin{array}{ c c c c c }\hline O(^1D) & N_2 \\ \hline O(^1D) & CO_2 \\ \hline O(^1D) & O_2 \\ \hline O(^1D) & O_3 \\ \hline O(^1D) & O_3 \\ \hline O(^1D) & H_2 \\ \hline O(^3P) & OH \\ \hline O(^3P) & HO_2 \\ \hline O(^3P) & HO_2 \\ \hline O(^3P) & H_2O_2 \\ \hline O(^3P) & H_2O_2 \\ \hline O(^3P) & O_3 \\ \hline H & O_3 \\ \hline OH & O_3 \\ \hline HO_2 & NO \\ \hline HO_2 & O_3 \\ \hline OH & HO_2 \\ \hline H & HO_2 \\ \hline OH & H_2 \\ \hline OH & H_2 \\ \hline OH & OH \\ \hline NO & O_3 \\ \hline NO_2 & O_3 \\ \hline \end{array}$	O( <sup>3</sup> P)           O( <sup>3</sup> P)           O( <sup>3</sup> P)           O2           O2           O4           O2           O4           O2           O4           O2           O4           O2           O4           O4           O5           O4           O4           O5           O4	$\begin{array}{c} N_2 \\ CO_2 \\ O_2 \\ O_2 \\ O_3 \\ O(^3P) \\ H \\ H \\ O_2 \\ HO_2 \\ O_2 $	O( <sup>3</sup> P)	2.15E-11 7.5E-11 3.3E-11 1.2E-10 1.2E-10 1.2E-10 1.8E-11 3E-11 1.4E-12 8E-12	-110 -115 -55 0 0 0 -120 -120 -200 2000	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1	0 0 0 0 0 0 0 0
$\begin{array}{ c c c c c c c }\hline O(^1D) & CO_2 \\\hline O(^1D) & O_2 \\\hline O(^1D) & O_3 \\\hline O(^1D) & O_3 \\\hline O(^1D) & H_2 \\\hline O(^3P) & OH \\\hline O(^3P) & HO_2 \\\hline O(^3P) & HO_2 \\\hline O(^3P) & H_2O_2 \\\hline O(^3P) & O_3 \\\hline H & O_3 \\\hline H & O_3 \\\hline OH & O_3 \\\hline HO_2 & NO \\\hline HO_2 & O_3 \\\hline OH & HO_2 \\\hline H & HO_2 \\\hline OH & H_2 \\\hline OH & H_2 \\\hline OH & OH \\\hline NO & O_3 \\\hline NO_2 & O_3 \\\hline \end{array}$	O( <sup>3</sup> P)           O( <sup>3</sup> P)           O2           O2           O4           O2           OH           O2           OH           O2           OH           O2           OH	$\begin{array}{c} \mathrm{CO}_2 \\ \mathrm{O}_2 \\ \mathrm{O}_2 \\ \mathrm{O}(^3\mathrm{P}) \\ \mathrm{H} \\ \mathrm{H} \\ \mathrm{O}_2 \\ \mathrm{HO}_2 \\ \mathrm{O}_2 \\ \mathrm{O}_2 \\ \mathrm{O}_2 \\ \mathrm{O}_2 \end{array}$	O( <sup>3</sup> P)	7.5E-11 3.3E-11 1.2E-10 1.2E-10 1.2E-10 1.8E-11 3E-11 1.4E-12 8E-12	-115 -55 0 0 0 -120 -200 2000	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	1 1 1 1 1 1	0 0 0 0 0 0
$\begin{array}{ c c c c c c c }\hline O(^1D) & O_2 \\ \hline O(^1D) & O_3 \\ \hline O(^1D) & O_3 \\ \hline O(^1D) & H_2 \\ \hline O(^3P) & OH \\ \hline O(^3P) & HO_2 \\ \hline O(^3P) & H_2O_2 \\ \hline O(^3P) & H_2O_2 \\ \hline O(^3P) & O_3 \\ \hline H & O_3 \\ \hline H & O_3 \\ \hline OH & O_3 \\ \hline HO_2 & NO \\ \hline HO_2 & O_3 \\ \hline OH & HO_2 \\ \hline H & HO_2 \\ \hline OH & H_2 \\ \hline OH & H_2 \\ \hline OH & OH \\ \hline NO & O_3 \\ \hline NO_2 & O_3 \\ \hline \end{array}$	O( <sup>3</sup> P)           O2           O2           O4           O2           OH	$\begin{array}{c} O_2 \\ O_2 \\ O(^3P) \\ H \\ H \\ O_2 \\ HO_2 \\ O_2 \\$	O( <sup>3</sup> P)	3.3E-11 1.2E-10 1.2E-10 1.2E-10 1.8E-11 3E-11 1.4E-12 8E-12	-55 0 0 -120 -200 2000	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0	1 1 1 1 1	0 0 0 0 0
$\begin{array}{ c c c c c c c c }\hline O(^1D) & O_3 \\\hline O(^1D) & O_3 \\\hline O(^1D) & H_2 \\\hline O(^3P) & OH \\\hline O(^3P) & OH \\\hline O(^3P) & HO_2 \\\hline O(^3P) & H_2O_2 \\\hline O(^3P) & O_3 \\\hline H & O_3 \\\hline OH & O_3 \\\hline HO_2 & NO \\\hline HO_2 & O_3 \\\hline OH & HO_2 \\\hline H & HO_2 \\\hline OH & H_2 \\\hline OH & H_2 \\\hline OH & OH \\\hline NO & O_3 \\\hline NO_2 & O_3 \\\hline \end{array}$	O2           O2           OH           HO2           OH	$\begin{array}{c} O_2 \\ O(^3P) \\ H \\ H \\ O_2 \\ HO_2 \\ O_2 \\ O_2 \\ O_2 \\ O_2 \\ O_2 \end{array}$	O( <sup>3</sup> P)	1.2E-10 1.2E-10 1.2E-10 1.8E-11 3E-11 1.4E-12 8E-12	0 0 -120 -200 2000	0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	1 1 1 1	0 0 0 0
$\begin{array}{ c c c c c c c }\hline O(^1D) & O_3 \\\hline O(^1D) & H_2 \\\hline O(^3P) & OH \\\hline O(^3P) & HO_2 \\\hline O(^3P) & H_2O_2 \\\hline O(^3P) & O_3 \\\hline H & O_3 \\\hline H & O_3 \\\hline OH & O_3 \\\hline HO_2 & NO \\\hline HO_2 & O_3 \\\hline OH & HO_2 \\\hline H & HO_2 \\\hline OH & H_2 \\\hline OH & H_2 \\\hline OH & OH \\\hline NO & O_3 \\\hline NO_2 & O_3 \\\hline \end{array}$	O2           OH           O2           OH           O2           OH	O( <sup>3</sup> P)           H           H           O2           HO2           O2           O2	O( <sup>3</sup> P)	1.2E-10 1.2E-10 1.8E-11 3E-11 1.4E-12 8E-12	0 0 -120 -200 2000	0 0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1	0 0 0
$\begin{array}{ c c c c c }\hline O(^1D) & H_2 \\ \hline O(^3P) & OH \\ \hline O(^3P) & HO_2 \\ \hline O(^3P) & H_2O_2 \\ \hline O(^3P) & O_3 \\ \hline H & O_3 \\ \hline H & O_3 \\ \hline OH & O_3 \\ \hline HO_2 & NO \\ \hline HO_2 & NO \\ \hline HO_2 & O_3 \\ \hline OH & HO_2 \\ \hline H & HO_2 \\ \hline OH & H_2 \\ \hline OH & OH \\ \hline NO & O_3 \\ \hline NO_2 & O_3 \\ \hline \end{array}$	OH           O2           OH	H H O <sub>2</sub> HO <sub>2</sub> O <sub>2</sub> O <sub>2</sub>		1.2E-10 1.8E-11 3E-11 1.4E-12 8E-12	0 -120 -200 2000	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0	0 0 0	1 1 1	0
$\begin{array}{ c c c c c }\hline O(^{3}P) & OH \\ \hline O(^{3}P) & HO_{2} \\ \hline O(^{3}P) & H_{2}O_{2} \\ \hline O(^{3}P) & O_{3} \\ \hline H & O_{3} \\ \hline H & O_{3} \\ \hline OH & O_{3} \\ \hline HO_{2} & NO \\ \hline HO_{2} & O_{3} \\ \hline OH & HO_{2} \\ \hline H & HO_{2} \\ \hline OH & H_{2} \\ \hline OH & OH \\ \hline NO & O_{3} \\ \hline NO_{2} & O_{3} \\ \hline \end{array}$	O2           OH           OH           O2           OH           O2           OH           O2           OH           HO2           OH	$H$ $O_2$ $HO_2$ $O_2$ $O_2$ $O_2$		1.8E-11 3E-11 1.4E-12 8E-12	-120 -200 2000	0 0 0	0 0 0	0 0	0	0	1	0
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	ОН ОН О2 ОН НО2	O2           HO2           O2           O2           O2		3E-11 1.4E-12 8E-12	-200 2000	0	0	0	0	0	1	0
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	OH           O2           OH           HO2           OH	HO <sub>2</sub> O <sub>2</sub> O <sub>2</sub>		1.4E-12 8E-12	2000	0	0	0			-	0
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	O2           OH           HO2           OH	0 <sub>2</sub> 0 <sub>2</sub>		8E-12			-	0	0	0	1	0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ОН НО <sub>2</sub>	O <sub>2</sub>			2060	0	0	0	0	0	1	0
$\begin{array}{ c c c c }\hline OH & O_3 \\ \hline HO_2 & NO \\ \hline HO_2 & O_3 \\ \hline OH & HO_2 \\ \hline H & HO_2 \\ \hline OH & H_2 \\ \hline OH & OH \\ \hline NO & O_3 \\ \hline NO_2 & O_3 \\ \hline \end{array}$	HO <sub>2</sub>	0		1.4E-10	470	0	0	0	0	0	1	0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ОН	$O_2$		1.7E-12	940	0	0	0	0	0	1	0
$\begin{array}{ c c c c } HO_2 & O_3 \\ \hline OH & HO_2 \\ \hline H & HO_2 \\ \hline H & HO_2 \\ \hline H & HO_2 \\ \hline OH & H_2 \\ \hline OH & OH \\ \hline OH & OH \\ \hline NO & O_3 \\ \hline NO_2 & O_3 \\ \hline \end{array}$		NO <sub>2</sub>		3.3E-12	-270	0	0	0	0	0	1	0
OH         HO2           H         HO2           H         HO2           H         HO2           OH         H2           OH         OH           NO         O3           NO2         O3	OH	O <sub>2</sub>	$O_2$	1E-14	490	0	0	0	0	0	1	0
$\begin{tabular}{ c c c c c } \hline H & HO_2 \\ \hline H & HO_2 \\ \hline H & HO_2 \\ \hline OH & H_2 \\ \hline OH & OH \\ \hline NO & O_3 \\ \hline NO_2 & O_3 \\ \hline \end{tabular}$	H <sub>2</sub> O	O <sub>2</sub>		4.8E-11	-250	0	0	0	0	0	1	0
H         HO2           H         HO2           OH         H2           OH         OH           NO         O3           NO2         O3	OH	OH		7.2E-11	0	0	0	0	0	0	1	0
HHO2OHH2OHOHNOO3NO2O3	$O(^{3}P)$	H <sub>2</sub> O		1.6E-12	0	0	0	0	0	0	1	0
OH         H <sub>2</sub> OH         OH           NO         O <sub>3</sub> NO <sub>2</sub> O <sub>3</sub>	$O_2$	H <sub>2</sub>		6.9E-12	0	0	0	0	0	0	1	0
OH         OH           NO         O <sub>3</sub> NO <sub>2</sub> O <sub>3</sub>	$H_2O$	Н		2.8E-12	1800	0	0	0	0	0	1	0
NO         O3           NO2         O3	$H_2O$	$O(^{3}P)$		1.8E-12	0	0	0	0	0	0	1	0
NO <sub>2</sub> O <sub>3</sub>	$NO_2$	O <sub>2</sub>		3E-12	1500	0	0	0	0	0	1	0
	$NO_3$	O <sub>2</sub>		1.2E-13	2450	0	0	0	0	0	1	0
OH H <sub>2</sub> O <sub>2</sub>	$H_2O$	HO <sub>2</sub>		1.8E-12	0	0	0	0	0	0	1	0
HO <sub>2</sub> NO <sub>2</sub>	$HNO_4$			2.9E-12	0	1.1	2E-31	0	3.4	0	1	0
OH HNO <sub>4</sub>	$H_2O$	O <sub>2</sub>	NO <sub>2</sub>	1.3E-12	-380	0	0	0	0	0	1	0
$O(^{1}D)$ $N_{2}$	$N_2O$			0	0	0	2.8E-36	0	0.9	0	1	0
OH NO <sub>2</sub>	HNO <sub>3</sub>			2.9E-11	0	1.1	1.8E-30	0	3	0	1	0
$O(^{3}P)$ $O_{2}$	O <sub>3</sub>			0	0	0	6E-34	0	2.4	0	1	0
H O <sub>2</sub>	$HO_2$			7.5E-11	0	-0.2	4.4E-32	0	1.3	0	1	0
OH OH				2.6E-11	0	0	6.9E-31	0	1	0	1	0

OH	$SO_2$	HSO <sub>3</sub>			1.6E-12	0	0	3.3E-31	0	4.3	0	1	0
HSO <sub>3</sub>	O <sub>2</sub>	HO <sub>2</sub>	$SO_3$		1.3E-12	300	0	0	0	0	0	1	0
OH	HNO <sub>3</sub>	H <sub>2</sub> O	NO <sub>3</sub>		2.4E-14	-460	0	6.5E-34	-1335	0	0	1	0
O <sub>2</sub>	HV185	$O(^{3}P)$	$O(^{3}P)$		1.1E-20	0	0	0	0	0	0	1	0
O <sub>3</sub>	HV254	O <sub>2</sub>	$O(^{1}D)$		1.03E-17	0	0	0	0	0	0	1	0
$H_2O_2$	HV185	HO <sub>2</sub>			1E-19	0	0	0	0	0	0	1	0
$H_2O_2$	HV254	OH			6.7E-20	0	0	0	0	0	0	1	0
$HO_2$	HV254	OH			2.63E-19	0	0	0	0	0	0	1	0
$HO_2$	HV185	OH			3.68E-18	0	0	0	0	0	0	1	0
$H_2O$	HV185	OH	Н		6.78E-20	0	0	0	0	0	0	1	0
$HO_2$	HO <sub>2</sub>	$H_2O_2$	O <sub>2</sub>		3E-13	-600	0	2.1E-33	-1000	0	0	1	0
$O(^{3}P)$	NO	NO <sub>2</sub>			3E-11	0	0	9E-32	0	1.5	0	1	0
$O(^{3}P)$	NO <sub>2</sub>	NO	O <sub>2</sub>		5.1E-12	-210	0	0	0	0	0	1	0
$O(^{3}P)$	NO <sub>2</sub>	NO <sub>3</sub>			2.2E-11	0	0.7	2.5E-31	0	1.8	0	1	0
$O(^{3}P)$	NO <sub>3</sub>	$O_2$	$NO_2$		1E-11	0	0	0	0	0	0	1	0
OH	NO	HNO <sub>2</sub>			3.6E-11	0	0.1	7E-31	0	2.6	0	1	0
OH	HNO <sub>2</sub>	H <sub>2</sub> O	NO <sub>2</sub>		1.8E-11	390	0	0	0	0	0	1	0
$HO_2$	NO <sub>3</sub>	OH	NO <sub>2</sub>	O <sub>2</sub>	3.5E-12	0	0	0	0	0	0	1	0
$HO_2$	NO <sub>3</sub>	NO	NO <sub>2</sub>	O <sub>2</sub>	4.5E-14	1260	0	0	0	0	0	1	0
$NO_2$	NO <sub>3</sub>	$N_2O_5$			1.4E-12	0	0.7	2E-30	0	4.4	0	1	0
$NO_3$	NO <sub>3</sub>	NO <sub>2</sub>	$NO_2$	O <sub>2</sub>	8.5E-13	2450	0	0	0	0	0	1	0
$O_3$	HNO <sub>2</sub>	$O_2$	HNO <sub>3</sub>		2.5E-19	0	0	0	0	0	0	1	0
$N_2O_5$	$H_2O$	HNO <sub>3</sub>	HNO <sub>3</sub>		1E-21	0	0	0	0	0	0	1	0
$NO_2$	HV185	NO	$O(^{1}D)$		6.882E-18	0	0	0	0	0	0	1	0
$NO_2$	HV185	NO	$O(^{3}P)$		1.05E-20	0	0	0	0	0	0	1	0
$N_2O$	HV185	$N_2$	$O(^{1}D)$		1.43E-19	0	0	0	0	0	0	1	0
$HNO_4$		NO <sub>2</sub>	$HO_2$		6E+15	11170	0	4.1E-05	10650	0	0.4	1	0
$N_2O_5$		$NO_2$	NO <sub>3</sub>		9.7E+14	11000	0.1	0.0013	11000	3.5	0.35	1	0
$N_2O$	$O(^{1}D)$	$N_2$	O <sub>2</sub>		4.64E-11	-20	0	0	0	0	0	1	0
$N_2O$	$O(^{1}D)$	NO	NO		7.26E-11	-20	0	0	0	0	0	1	0
OH	CO	HO <sub>2</sub>	$CO_2$		1.5E-13	0	-0.6	0	0	0	0	1	0
OH	CO	HOCO			1.1E-12	0	-1.3	5.9E-33	0	0.4	0	1	0

## References

Peng, Z. and Jimenez, J. L.: Radical chemistry in oxidation flow reactors for atmospheric chemistry research, Chem. Soc. Rev., http://dx.doi. org/10.1039/C9CS00766K, 2020.