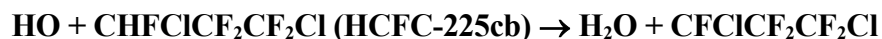


IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet oClOx59

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This data sheet last evaluated: June 2015; last change in preferred values: November 2003.



Rate coefficient data

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i>			
$6.75 \times 10^{-13} \exp[-(1300 \pm 180)/T]$	298-400	Zhang et al., 1991	FP-RF
$(8.6 \pm 1.1) \times 10^{-15}$	298		
$3.9 \times 10^{-13} \exp[-(1120 \pm 125)/T]$	295-374	Nelson et al., 1992	DF-LIF
$(9.0 \pm 1.1) \times 10^{-15}$	295		

Preferred Values

Parameter	Value	T/K
$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	8.9×10^{-15}	298
$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	$5.5 \times 10^{-13} \exp(-1230/T)$	290-400
<i>Reliability</i>		
$\Delta \log k$	± 0.10	298
$\Delta(E/R)$	± 300	290-400

Comments on Preferred Values

The preferred values are derived from a least-squares analysis of the rate coefficients of Zhang et al. (1991) and Nelson et al. (1992), which are in excellent agreement.

References

- Nelson, D. D., Jr., Zahniser, M. S. and Kolb, C. E.: J. Phys. Chem., 96, 249, 1992.
Zhang, Z., Liu, R., Huie, R. E. and Kurylo, M. J.: Geophys. Res. Lett., 18, 5, 1991.

