IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet oBrOx8

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HO + CF$_3$CHFBr (Halon 2401) $\rightarrow$ H$_2$O + CF$_3$CFBr

Rate coefficient data

k/cm^3 molecule^{-1} s^{-1}	Temp./K	Reference	Technique/ Comments
Absolute Rate Coefficients			
1.13 x 10^{-12} exp[-(1250 $\pm$ 364)/T]	279-423	Brown et al., 1990	DF-RF
(1.7 $\pm$ 0.3) x 10^{-14}	298		
7.2 x 10^{-13} exp[-(1111 $\pm$ 32)/T]	298-460	Orkin and Khamaganov, 1993	DF-EPR
(1.75 $\pm$ 0.17) x 10^{-14}	298		

Preferred Values

k = 1.7 x 10^{-14} cm^3 molecule^{-1} s^{-1} at 298 K.
k = 8.1 x 10^{-13} exp(-1155/T) cm^3 molecule^{-1} s^{-1} over the temperature range 279-460 K.

Reliability
   Δlog k = $\pm$ 0.2 at 298 K.
   Δ(E/R) = $\pm$ 300 K.

Comments on Preferred Values
   The absolute rate coefficients of Brown et al. (1990) and Orkin and Khamaganov (1993) are in good agreement. A least-squares analysis of the rate coefficients of Brown et al. (1990) and Orkin and Khamaganov (1993) yields the preferred values.

References

Brown, A. C., Canosa-Mas, C. E., Parr, A. D., Rothwell, K. and Wayne, R. P.: Nature 347, 541, 1990.
Orkin, V. L. and Khamaganov, V. G.: J. Atmos. Chem. 16, 169, 1993.