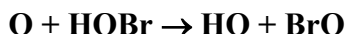


IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet iBrOx1

Website: <http://iupac.pole-ether.fr>. See website for latest evaluated data. Data sheets can be downloaded for personal use only and must not be re-transmitted or disseminated either electronically or in hard copy without explicit written permission.

This data sheet updated: 23th July 2003.



$$\Delta H^\circ \leq -36 \text{ kJ}\cdot\text{mol}^{-1}$$

Rate coefficient data

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i>			
$(2.5 \pm 0.4) \times 10^{-11}$	298	Monks et al., 1993	DF-MS
$1.4 \times 10^{-10} \exp[-(430 \pm 260)/T]$	233-423	Nesbitt et al., 1995	DF-MS
$(2.5 \pm 0.6) \times 10^{-11}$	298		
$(3.1 \pm 0.2) \times 10^{-11}$	300	Kukui et al., 1996	DF-MS

Preferred Values

$$k = 2.8 \times 10^{-11} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

$$k = 1.2 \times 10^{-10} \exp(-430/T) \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ over the temperature range } 230 \text{ K to } 430 \text{ K.}$$

Reliability

$$\Delta \log k = \pm 0.2 \text{ at } 298 \text{ K.}$$

$$\Delta(E/R) = \pm 300 \text{ K.}$$

Comments on Preferred Values

The preferred rate coefficient at 298 K is the mean of the values of Nesbitt et al. (1995) and Kukui et al. (1996) and the temperature dependence is that of Nesbitt et al. (1995) with the A-factor adjusted to yield the preferred rate coefficient at 298 K. Note that the rate coefficient for this reaction is almost a factor of 200 greater than that for the corresponding reaction of O(³P) atoms with HOCl (IUPAC, 2003).

References

IUPAC: <http://iupac.ple-ether.fr>, 2013

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Monks, P. S., Nesbitt, F. L., Scanlon, M. and Stief, L. J.: J. Phys. Chem. 97, 11699, 1993.

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