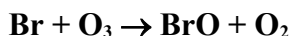


# IUPAC Task Group on Atmospheric chemical Kinetic Data Evaluation – Data Sheet iBrOx6

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: 25<sup>th</sup> September 2003.



$$\Delta H^\circ = -135 \text{ kJ}\cdot\text{mol}^{-1}$$

## Rate coefficient data

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i>			
$(1.2 \pm 0.2) \times 10^{-12}$	298	Clyne and Watson, 1975	DF-MS
$3.34 \times 10^{-11} \exp[-(978 \pm 36)/T]$	224-422	Leu and DeMore, 1977	DF-MS
$(1.16 \pm 0.16) \times 10^{-12}$	298		
$7.74 \times 10^{-12} \exp[-(603 \pm 16)/T]$	200-360	Michael et al., 1978	FP-RF
$(1.01 \pm 0.18) \times 10^{-12}$	298		
$9.45 \times 10^{-12} \exp[-(659 \pm 64)/T]$	234-360	Michael and Payne, 1979	DF-RF
$(1.12 \pm 0.07) \times 10^{-12}$	298		
$3.28 \times 10^{-11} \exp[-(944 \pm 30)/T]$	248-418	Toohey et al., 1988	DF-RF
$(1.42 \pm 0.03) \times 10^{-12}$	298		
$1.50 \times 10^{-11} \exp[-(775 \pm 30)/T]$	195-392	Nicovich et al., 1990	PLP-RF
$(1.11 \pm 0.07) \times 10^{-12}$	298		
$(1.2 \pm 0.1) \times 10^{-12}$	298	Ninomiya et al., 2000	PLP-CRDS (a)

## Comments

- (a) BrO formation was monitored by cavity ring down spectroscopy at 338.5 nm. The background signal was monitored at 338.1 nm.

## Preferred Values

$$k = 1.2 \times 10^{-12} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

$$k = 1.7 \times 10^{-11} \exp(-800/T) \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ over the temperature range } 190 \text{ K to } 430 \text{ K.}$$

### Reliability

$$\Delta \log k = \pm 0.08 \text{ at } 298 \text{ K.}$$

$$\Delta(E/R) = \pm 200 \text{ K.}$$

### Comments on Preferred Values

The recommended Arrhenius expression is based on a fit to the results of Clyne and Watson (1975), Leu and DeMore (1977), Michael et al. (1978), Michael and Payne (1979), Toohey et al. (1988), Nicovich et al. (1990) and Ninomiya et al. (2000).

## References

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