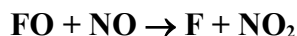


IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet iFOx11

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: 22th July 2003.



$$\Delta H^\circ = -87 \text{ kJ}\cdot\text{mol}^{-1}$$

Rate coefficient data

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i>			
$(2.6 \pm 0.5) \times 10^{-11}$	298	Ray and Watson, 1981 ¹	DF-MS
$1.86 \times 10^{-11}(T/300)^{-0.66 \pm 0.13}$	300-845	Bedzhanyan, Markin, and Gershenzon, 1993 ²	DF-LMR
$(1.9 \pm 0.4) \times 10^{-11}$	300		

Preferred Values

$$k = 2.2 \times 10^{-11} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

$$k = 8.2 \times 10^{-12} \exp(300/T) \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ over the temperature range } 290 \text{ K to } 850 \text{ K.}$$

Reliability

$$\Delta \log k = \pm 0.15 \text{ at } 298 \text{ K.}$$

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

Comments on Preferred Values

The preferred room temperature value is the average of the room temperature values from the only two studies of Ray and Watson¹ and Bedzhanyan *et al.*² The temperature dependence is derived from a fit to the data of Bedzhanyan *et al.*² and the *A*-factor is fitted to the preferred 298 K value. The temperature dependence is similar to those for the analogous ClO and BrO radical reactions.

References

- ¹ G. W. Ray and R. T. Watson, *J. Phys. Chem.* **85**, 2955 (1981).
- ² Yu. R. Bedzhanyan, E. M. Markin, and Yu. M. Gershenzon, *Kinet. Catal.* **34**, 1 (1993); original pages 7-10 (1993).