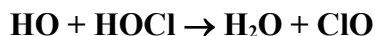


IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet iClOx23

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 last evaluated: 28th June 2007; no revision of preferred values.



$$\Delta H^\circ = -99.4 \text{ kJ}\cdot\text{mol}^{-1}$$

Rate coefficient data

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i> (1.7-9.5) $\times 10^{-13}$	298	Ennis and Birks, 1988	DF-RF/MS (a)

Comments

- (a) HO radical decays in the presence of excess HOCl were monitored by resonance fluorescence. HOCl concentrations were measured by MS. The effects of the presence of Cl₂O and Cl₂ impurities in the HOCl and the occurrence of secondary reactions were investigated through computer modeling, and the lower and upper limits to the rate coefficient k cited in the table obtained.

Preferred Values

$$k = 5.0 \times 10^{-13} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

Reliability

$$\Delta \log k = \pm 0.5 \text{ at } 298 \text{ K.}$$

Comments on Preferred Values

The only reported experimental value of Ennis and Birks (1988) has a large uncertainty, and the preferred value is based on the mid-range value of $5 \times 10^{-13} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$ at 298 K from this study.

References

Ennis, C. A. and Birks, J. W.: J. Phys. Chem. 92, 1119, 1988.