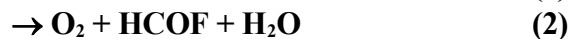


IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet of FOx32

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 retransmitted or disseminated either electronically or in hardcopy without explicit written permission.

This data sheet updated: 29th March 2005.



Rate coefficient data ($k = k_1 + k_2$)

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Branching Ratios</i>			
$k_1/k = 0.29 \pm 0.08$	295	Wallington et al., 1994	UVP-FTIR (a)
$k_2/k = 0.71 \pm 0.11$	295		

Comments

- (a) HO₂ and CH₂FO₂ radicals were generated from the steady-state photolysis of Cl₂ in the presence of CH₃F-H₂-air mixtures at total pressures of 400-933 mbar. The branching ratios were derived from FTIR analysis of CH₂FO₂H and HCOF, which accounted for 100 ± 13% of the loss of CH₃F.

Preferred Values

$$k_1/k = 0.3 \text{ at } 298 \text{ K.}$$

$$k_2/k = 0.7 \text{ at } 298 \text{ K.}$$

Reliability

$$\Delta(k_1/k) = \Delta(k_2/k) = \pm 0.1 \text{ at } 298 \text{ K.}$$

Comments on Preferred Values

The lack of a pressure dependence of the branching ratio determined by Wallington et al. (1994) indicates that there is no thermal decomposition of the products. The observation of two reaction channels for this reaction is in accord with data for other HO₂ reactions with substituted peroxy radicals, for example, with HOCH₂O₂ and CH₃OCH₂O₂ radicals.

References

Wallington, T. J., Hurley, M. D., Schneider, W. F., Sehested, J. and Nielsen, O. J.: Chem. Phys. Lett. 218, 34, 1994.