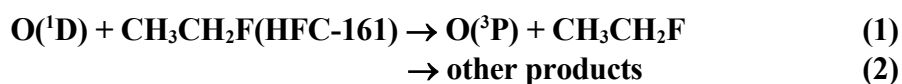


IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet of FOx5

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

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This datasheet last evaluated: June 2015; last change in preferred values: July 2007.



$$\Delta H^\circ(1) = -190 \text{ kJ mol}^{-1}$$

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

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i>			
$(2.61 \pm 0.40) \times 10^{-10}$	298	Schmoltner et al., 1993	PLP-RF
<i>Branching Ratios</i>			
$k_1/k = 0.18 \pm 0.05$	298	Schmoltner et al., 1993	PLP-RF (a)

Comments

- (a) Branching ratio was determined from the ratio of the O(³P) yield from O(¹D) + CH₃CH₂F relative to that for O(¹D) + N₂.

Preferred Values

$$k = 2.6 \times 10^{-10} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

$$k_1/k = 0.18 \text{ at } 298 \text{ K.}$$

Reliability

$$\Delta \log k = \pm 0.3 \text{ at } 298 \text{ K.}$$

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

Comments on Preferred Values

The preferred value of k and the preferred value of the branching ratio k_1/k are based on the results of Schmoltner et al. (1993), the only published study of this reaction. In these experiments, only O(³P) was monitored and therefore no direct information relating to the products of the chemical reaction of O(¹D) + CH₃CH₂F was obtained.

References

Schmoltner, A. M., Talukdar, R. K., Warren, R. F., Mellouki, A., Goldfarb, L., Gierczak, T., McKeen, S. A. and Ravishankara, A. R.: J. Phys. Chem., 97, 8976, 1993.