

# IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet of FO<sub>x</sub>37

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This data sheet updated: 3<sup>rd</sup> February 2004.

## FO<sub>2</sub> + CH<sub>4</sub> → products

### Rate coefficient data

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i> $<4.1 \times 10^{-15}$	298	Sehested <i>et al.</i> , 1994 <sup>1</sup>	(a)

### Comments

- (a) Pulse radiolysis/UV absorption spectroscopy technique. Pulse radiolysis of CH<sub>4</sub>-O<sub>2</sub>-SF<sub>6</sub> mixtures in a high pressure cell at 18 bar SF<sub>6</sub>. The decay of FO<sub>2</sub> radicals was monitored in absorption at 220 nm.

### Preferred Values

$k < 4.1 \times 10^{-15} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$  at 298 K.

#### *Comments on Preferred Values*

The preferred room temperature upper limit is based on results of the pulse radiolysis/UV absorption study of Sehested *et al.*<sup>1</sup> This is the sole reported study of this reaction rate coefficient.

### References

- <sup>1</sup> J. Sehested, K. Sehested, O. J. Nielsen, and T. J. Wallington, *J. Phys. Chem.* **98**, 6731 (1994).