

IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet iFOx13

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FO₂ + O₃ → products

Rate coefficient data

k/cm ³ molecule ⁻¹ s ⁻¹	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i>			
<3.4 x 10 ⁻¹⁶	298	Sehested <i>et al.</i> , 1994 ¹	PR-UVA (a)
<3 x 10 ⁻¹⁵	298	Li, Friedl and Sander, 1995 ²	DF-MS (b)

Comments

- Pulse radiolysis of O₃-O₂-SF₆ mixtures in a high pressure cell at 18 bar of SF₆. The decay of FO₂ radicals was monitored in absorption at 220 nm.
- First-order decay rate of FO₂ in presence of excess O₃ at 1.3 mbar (1 Torr) total pressure was monitored by mass spectrometry.

Preferred Values

$k < 4 \times 10^{-16} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$ at 298 K.

Comments on Preferred Values

The preferred room temperature upper limit to the rate coefficient is based on results of the pulse radiolysis-UV absorption study of Sehested *et al.*¹ A higher upper limit was reported by Li *et al.*²

References

- J. Sehested, K. Sehested, O. J. Nielsen, and T. J. Wallington, *J. Phys. Chem.* **98**, 6731 (1994).
- Z. Li, R. R. Friedl, and S. P. Sander, *J. Phys. Chem.* **99**, 13445 (1995).