

IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet SOx41

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This data sheet updated: 19th November 2001.

HSO + NO → products

Rate coefficient data

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i>			
$(2.6 \pm 0.4) \times 10^{-14}$	293	Bulatov, Kozliner and Sarkisov, 1985 ¹	PLP-A (a)
$\leq 1.0 \times 10^{-15}$	298	Lovejoy, Wang and Howard, 1987 ²	DF-LMR

Comments

- (a) HSO radicals monitored by intra-cavity laser absorption at 583 nm.

Preferred Values

$k < 1.0 \times 10^{-15} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$ at 298 K.

Comments on Preferred Values

The only two available measurements of k differ by at least a factor of 26. This is unlikely to be due to the higher pressures used in the Bulatov *et al.*¹ study, but may arise from secondary chemistry in their HSO source which employed relatively large H₂S concentrations. Provisionally, the upper limit to the rate coefficient reported by Lovejoy *et al.*² is preferred.

References

¹ V. P. Bulatov, M. Z. Kozliner, and O. M. Sarkisov, *Khim. Fiz.* **4**, 1353 (1985).

² E. R. Lovejoy, N. S. Wang, and C. J. Howard, *J. Phys. Chem.* **91**, 5749 (1987).