

IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet SOx63

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CH₃SOO + O₃ → products

Rate coefficient data

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i> 8×10^{-13}	227	Turnipseed et al., 1993	(a)

Comments

- (a) Pulsed laser photolysis of (CH₃)₂S-O₂-O₃ mixtures at 193 nm in bath gas of He, N₂, or SF₆. CH₃S + O₂ ↔ CH₃SOO equilibrium established. [CH₃S] was monitored by LIF. [CH₃S] temporal profiles were simulated to obtain k . $k(\text{CH}_3\text{S} + \text{O}_3)$ obtained in the same study was used in the fitting procedure.

Preferred Values

$k < 8 \times 10^{-13} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$ at 227 K.

Comments on Preferred Values

The single study of the rate of this reaction (Turnipseed et al., 1993) has provided only an upper limit to k at 227 K, which is accepted as the preferred value.

References

Turnipseed, A. A., Barone, S. B. and Ravishankara, A. R.: J. Phys. Chem. 97, 5926, 1993.