

## IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet SOx64

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This data sheet updated: 20<sup>th</sup> November 2001.

### CH<sub>3</sub>SOO + NO → products

#### Rate coefficient data

<i>k</i> /cm <sup>3</sup> molecule <sup>-1</sup> s <sup>-1</sup>	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i> (1.10 ± 0.38) × 10 <sup>-11</sup>	227-256	Turnipseed et al., 1993	(a)

#### Comments

- (a) Pulsed laser photolysis of (CH<sub>3</sub>)<sub>2</sub>S<sub>2</sub>-O<sub>2</sub>-NO mixtures at 248 nm with He or SF<sub>6</sub> as the bath gas. Only a limited pressure range could be studied [21-28 mbar (16-21 Torr) He, 25 mbar (19 Torr) SF<sub>6</sub>], but no effect of pressure on *k* was observed. [CH<sub>3</sub>S] was monitored by LIF and the temporal profile simulated to obtain *k*.

#### Preferred Values

$k = 1.1 \times 10^{-11} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$ , independent of temperature over the range 227-256 K.

#### Reliability

$\Delta \log k = \pm 0.3$  over the range 227-256 K.

#### Comments on Preferred Values

The value of *k* obtained in the only study of this reaction (Turnipseed et al., 1993) is accepted but substantial error limits are assigned until confirmatory studies are made.

#### References

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