

## IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet SO<sub>x</sub>73

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

### CH<sub>3</sub>SSO + NO<sub>2</sub> → 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> (4.5 ± 1.2) × 10 <sup>-12</sup>	297	Dominé et al., 1990	(a)

#### Comments

- (a) Fast-flow discharge system with photoionization mass spectrometric detection of products. CH<sub>3</sub>SSO radicals were produced by CH<sub>3</sub>SS + NO<sub>2</sub> → CH<sub>3</sub>SSO + NO. Mass 47 peak was monitored in excess NO<sub>2</sub> and the contributions from CH<sub>3</sub>S and CH<sub>3</sub>SSO (from CH<sub>3</sub>SSO + hν → CH<sub>3</sub>S<sup>+</sup> + e<sup>-</sup> + SO) were separated by modeling using data from other mass peaks.

#### Preferred Values

$$k = 4.5 \times 10^{-12} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

#### Reliability

$$\Delta \log k = \pm 0.3 \text{ at } 298 \text{ K.}$$

#### Comments on Preferred Values

The study of Dominé et al. (1990) has provided the only available value for the rate coefficient of this reaction. This value is accepted but with substantial error limits until confirmatory studies are made.

#### References

Dominé, F., Murrells, T. P. and Howard, C. J.: J. Phys. Chem. 94, 5839, 1990.