

## IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet SO<sub>x</sub>72

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

### CH<sub>3</sub>SS + 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> (1.8 ± 0.3) × 10 <sup>-11</sup>	297	Dominé et al., 1990	(a)

#### Comments

- (a) Fast-flow discharge study. CH<sub>3</sub>SS radicals were produced as a by-product of CH<sub>3</sub>S radical production. CH<sub>3</sub>S radicals were produced by the Cl + CH<sub>3</sub>SH reaction. CH<sub>3</sub>SS was observed to be formed in the CH<sub>3</sub>S source and thought to be due to the CH<sub>3</sub>S + S<sub>2</sub> reaction on walls. [CH<sub>3</sub>SS] was monitored by photoionization mass spectrometry in excess NO<sub>2</sub>.

#### Preferred Values

$k = 1.8 \times 10^{-11} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$  at 298 K.

#### Reliability

$\Delta \log k = \pm 0.3$  at 298 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.