IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet SOx72

This data sheet updated: 20th November 2001.

$CH_3SS + NO_2 \rightarrow$ products

Rate coefficient data

k/cm^3 molecule^{-1} s^{-1}	Temp./K	Reference	Technique/ Comments
Absolute Rate Coefficients			
$(1.8 \pm 0.3) \times 10^{-11}$	297	Dominé et al., 1990	(a)

Comments

(a) Fast-flow discharge study. CH_3SS radicals were produced as a by-product of CH_3S radical production. CH_3S radicals were produced by the Cl + CH_3SH reaction. CH_3SS was observed to be formed in the CH_3S source and thought to be due to the $CH_3S + S_2$ reaction on walls. [CH_3SS] was monitored by photoionization mass spectrometry in excess NO_2.

Preferred Values

$k = 1.8 \times 10^{-11}$ cm^3 molecule^{-1} 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.