IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet SOx73

This data sheet updated: 20th November 2001.

$CH_3SSO + NO_2 \rightarrow$ products

Rate coefficient data

k/cm^3 molecule^{-1} s^{-1}	Temp./K	Reference	Technique/ Comments
Absolute Rate Coefficients			
$(4.5 \pm 1.2) \times 10^{-12}$	297	Dominé et al., 1990	(a)

Comments

(a) Fast-flow discharge system with photoionization mass spectrometric detection of products. CH_3SSO radicals were produced by $CH_3SS + NO_2 \rightarrow CH_3SSO + NO$. Mass 47 peak was monitored in excess NO_2 and the contributions from CH_3S and CH_3SSO (from $CH_3SSO + h\upsilon \rightarrow CH_3S^+ + e^- + SO$) were separated by modeling using data from other mass peaks.

Preferred Values

$k = 4.5 \times 10^{-12}$ 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.