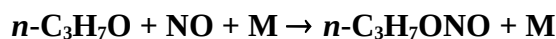


IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet II.A5.112 RO_13

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This data sheet last evaluated: 4th June 2009. Last change in preferred values: 12th June 2003.



High-pressure rate coefficients Rate coefficient data

$k_{\infty 1}/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i>			
$(3.8 \pm 0.1) \times 10^{-14} (T/300)^{-1.2}$	289-380	Fittschen <i>et al.</i> , 1999 ²	PLP-LIF (a)

Comments

- (a) Measurements over the range 39-132 mbar of He. Results assumed to be in the high pressure range. The observed T-dependence may be the result of falloff effects.

Preferred Values

$$k_{\infty 1} = 3.8 \times 10^{-11} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

Reliability

$$\Delta \log k_{\infty 1} = \pm 0.3 \text{ at } 298 \text{ K.}$$

Comments on Preferred Values

The only available measurement from ref. 1 gives similar results as for $i\text{-C}_3\text{H}_7\text{O} + \text{NO} + \text{M} \rightarrow i\text{-C}_3\text{H}_7\text{ONO} + \text{M}$. The apparent temperature coefficient may be due to falloff effects (its origin needs to be clarified).

References

- ¹ C. Fittschen, A. Frenzel, K. Imrik, and P. Devolder, *Int. J. Chem. Kinet.* **31**, 800 (1999).