

IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet NO₃_VOC6

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This data sheet updated: 29th October 2007 (with no revisions of the preferred values).



$$\Delta H^\circ(1) = -3.5 \text{ kJ}\cdot\text{mol}^{-1}$$

$$\Delta H^\circ(2) = -17.7 \text{ kJ}\cdot\text{mol}^{-1}$$

Rate coefficient data ($k = k_1 + k_2$)

$k/\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$	Temp./K	Reference	Technique/ Comments
<i>Absolute Rate Coefficients</i> $\leq (4.8 \pm 1.7) \times 10^{-17}$	298	Boyd et al., 1991	(a)

Comments

- (a) Stopped-flow system with optical absorption detection of the NO₃ radical at 662 nm. The occurrence of secondary reactions is expected to lead to a stoichiometry factor of ≥ 2 , resulting in the upper limit to the rate coefficient cited in the table.

Preferred Values

$$k < 7 \times 10^{-17} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

Comments on Preferred Values

The preferred value is based on the upper limit derived by Boyd et al. (1991).

References

Boyd, A. A., Canosa-Mas, C. E., King, A. D., Wayne, R. P. and Wilson, M. R.: J. Chem. Soc. Faraday Trans., 87, 2913, 1991.