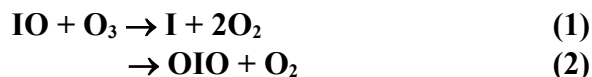


## IUPAC Task Group on Atmospheric Chemical Kinetic Data Evaluation – Data Sheet iIOx14

Website: <http://iupac.pole-ether.fr>. See website for latest evaluated data. Data sheets can be downloaded for personal use only and must not be re-transmitted or disseminated either electronically or in hard copy without explicit written permission.

This data sheet updated: 25<sup>th</sup> September 2003.



$$\Delta H^\circ(1) = -151 \text{ kJ}\cdot\text{mol}^{-1}$$

### 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>			
$k_1 < 1.2 \times 10^{-15}$	292	Larin <i>et al.</i> , 1999 <sup>1</sup>	F-RF (a)
$k_2 < 2.3 \times 10^{-16}$	323		

### Comments

- (a) I atoms were generated by photolysis of CF<sub>3</sub>I at 253.7 nm in a fast flow system using He as the carrier gas. Channel (1) was investigated by direct monitoring of I atom concentrations by resonance fluorescence and channel (2) was studied by monitoring the IO concentration by addition of NO and detection of the I atoms generated.

### Preferred Values

$$k_1 < 1 \times 10^{-15} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

$$k_2 < 2 \times 10^{-16} \text{ cm}^3 \text{ molecule}^{-1} \text{ s}^{-1} \text{ at } 298 \text{ K.}$$

### Comments on Preferred Values

The only experimental study of the reaction<sup>1</sup> gives upper limits for the rate coefficients for the two channels which are substantially higher than the corresponding rate coefficients for the analogous reactions of FO, ClO, and BrO radicals. It is likely that the rate coefficients are substantially smaller but the measured upper limits are provisionally accepted.

### References

- <sup>1</sup> I. K. Larin, D. V. Nevozhai, A. I. Spasskii, E. F. M. Trofimova, and L. E. Turkin, *Kinet. Katal.* **40**, 487 (1999). Eng. Trans. p. 435.