Author:

Ian Smith (University of Cambridge, UK)

$N(^4S) + C_4N(^2\Sigma_g^+) \rightarrow CN(^2\Sigma^+) + C_3N(X^2\Sigma^+)$ (1) No thermochemical data for C_4N or C_3N

Rate Coefficient Data *k*

k / cm^3 molecule^{-1} s^{-1}	T / K	Reference	Comments
Rate Coefficient Measurements (k)			
No measurements were found in the literature			
Reviews and Evaluations			
1.0×10^{-10}	10- 300	UMIST database	
1.0×10^{-10}	no T-dependence	OSU website	

Comments

This radical-radical reaction is presumably exothermic (but I can find no thermochemical data on C_4N. Reaction is spin-allowed (over triplet PESs). However, the reactants also correlate with quintet PESs.

Preferred Values

Rate coefficient (10 – 300 K)

$k(T) = 9.0 \times 10^{-11}(T/300)^{0.17}$ cm^{3}s^{-1}

Reliability

$F_0 = 3$; $g = 0$

Comments on Preferred Values

The UMIST and Ohio databases adopt the same rate coefficient value as for N + C_2N. This seems to be a reasonable estimate.

References