

Complete depletion in prestellar cores. Multiply-deuterated species in prestellar cores (*Corrigendum*)

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A&A, 418, 1035–1043 (2004), DOI: 10.1051/0004-6361:20035718

A&A, 427, 887–893 (2004), DOI: 10.1051/0004-6361:20041464

Key words. astrochemistry – ISM: clouds – stars: formation – errata, addenda

In our papers, Walmsley et al. (2004) and Flower et al. (2004), the captions to the tables in the Appendices A were inexact with respect to the reactions involving grains. We stated (i) that the parameters α , β , and γ defined the rate coefficients k ($\text{cm}^3 \text{s}^{-1}$) at temperature T (K) through the relation $k = \bar{J}(a_g, T)\gamma(T/300)^\alpha \exp(-\beta/T)$, where \bar{J} allowed for Coulomb focusing in reactions of positive ions and negatively charged grains (Draine & Sutin 1987, Eq. (3.4)); and (ii) that a grain radius $a_g = 0.1 \mu\text{m}$ was adopted in the table. In fact, the tabulated values of γ were determined for a size distribution following the Mathis et al. (1977) power law, with limits $0.01 \leq a_g \leq 0.3 \mu\text{m}$. The tabulated value of γ was multiplied by $(a_g/0.02)^2$ within our program, to obtain the grain cross section corresponding to the

adopted value of $a_g = 0.1 \mu\text{m}$. (The mean radius for the size distribution of Mathis et al. (1977) is $0.02 \mu\text{m}$.) Thus, the tabulated values of γ for reactions between ions and grains should be increased by a factor of 25 to correspond to the numbers actually used in our models, for a grain size $a_g = 0.1 \mu\text{m}$.

References

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