

THE RADIATIVE ASSOCIATION OF H AND D¹

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The formation of the deuterated hydrogen molecule HD by the radiative association of H and D is investigated. Spontaneous association and stimulated association in a blackbody radiation field are considered. For a collision temperature of 1000 K, the rate coefficient for spontaneous radiative association is $1.0 \times 10^{-26} \text{ cm}^3 \text{ s}^{-1}$. At the same collision temperature, the rate coefficient is enhanced by stimulated association to $1.8 \times 10^{-26} \text{ cm}^3 \text{ s}^{-1}$ for a radiation temperature of 10,000 K. The role of radiative association in the deuterium chemistry of the early universe is discussed.

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