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relaxation time

1. In magnetic resonance spectroscopy the longitudinal relaxation time, T_1, is associated with spin-lattice relaxation, and the transverse relaxation time, T_2, with spin-spin relaxation. The definitions are: $\frac{\mathrm{d}M_z}{\mathrm{d}t} = -\frac{M_z - M_{z,\mathrm{e}}}{T_1}$ and $\frac{\mathrm{d}M_x}{\mathrm{d}t} = -\frac{M_x}{T_2}$, where M_z and M_x are the components of magnetization parallel and perpendicular to the static field B and the subscript e denotes the equilibrium value.

   Source:
   Green Book, 2nd ed., p. 25
2. In a chemical reaction, the time, τ, in which a concentration perturbation falls to $\frac{1}{\mathrm{e}}$ of its initial value.

Source:
Green Book, 2nd ed., p. 55

See also:
PAC, 1996, *68*, 149 *(A glossary of terms used in chemical kinetics, including reaction dynamics (IUPAC Recommendations 1996))* on page 185

