NON-LTE CHEMISTRY IN THE INNER ENVELOPE OF IRC+10216

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We study the chemistry in the inner envelope of the C-rich AGB star IRC+10216. This star is loosing mass at a rate of $\sim 2-3\times 10^{-5} M_{\odot} yr^{-1}$ that produces an extended circumstellar envelope. The high temperature and density in the vicinity of the photosphere make the molecular abundances to be determined by the chemical equilibrium, but as the gas expands the temperature and density fall and the chemical timescale increases making the kinetics the one that determines the molecular abundances. We study the deviation of the molecular abundances from the LTE in the context of chemical kinetics, and analyze the effects that phenomena such as shocks and depletion of some silicon species on SiC grains, susceptible of being present in the inner envelope, can produce on molecular abundances.