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Pressure effect on the charge-density-wave order in pure and doped (La,R)$AgSb_2$ (R = Ce, Nd) compounds[1] M.S. TORIKACHVILI, Dep. of Physics, San Diego State U., S.L. BUD'KO, S.A. LAW, M.E. TILLMAN, E.D. MUN, P.C. CANFIELD, Ames Lab. and Dept. of Physics, Iowa State U. — We studied the pressure dependent resistivity, $\rho(T)$, of single-crystals of pure and doped (La,R)$AgSb_2$ (R = Ce, Nd) compounds, up to 23 kbar, for temperatures $2 \leq T \leq 300$ K. $LaAgSb_2$ displays features at $T_1 = 210$ K, and $T_2 = 185$ K, due to the formation of charge-density-wave (CDW) order along the $a-$ and $c-$ axis of the tetragonal structure, respectively. The effect of pressure in $LaAgSb_2$ is to lower T_1 at the rate of -4.5 K/kbar. Partial substitutions of Nd and Ce for La depress T_1 as well, and the effect of pressure is to lower it further. The value of $T_1 = 112$ K for $La_{0.75}Nd_{0.25}AgSb_2$ drops with pressure at the rate of -5.8 K/kbar, until the feature in $\rho(T)$ cannot be identified above 12 kbar, suggesting the closure of the CDW gap. The effect of pressure on $La_{0.9}Ce_{0.1}AgSb_2$, and $La_{0.8}Ce_{0.2}AgSb_2$ is to depress T_1 at the rate of ≈ -10 K/kbar, with the suppression of CDW order for $P \approx 12$ and ≈ 8 kbar, respectively. The $\rho(T)$ data for the Ce-doped compounds show upturns at low temperatures due to the Kondo effect, and the minimum in $\rho(T)$ is lowered with pressure.

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