

## MAGNETIC PROPERTIES OF Mn-DOPED InSe

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### S u m m a r y

The static magnetic susceptibility (MS) and the electron paramagnetic resonance (EPR) spectra of a layered semiconductor InSe doped with manganese (about 5 at.%) have been studied in the temperature range 4.2–300 K, as well as the crystal structure of this compound (at  $T = 300$  K). The formation of a solid solution  $\text{In}_{1-x}\text{Mn}_x\text{Se}$  (about 90 vol.%), ferromagnetic clusters with the Curie temperatures higher than 350 K, and inclusions of the antiferromagnetic phase MnSe (about 10 vol.%) has been established. The positive background MS practically does not depend on the temperature and partially originates from those ferromagnetic states and atypical Van-Vleck ions  $\text{Mn}^{3+}(d^4)$  and  $\text{Mn}^{4+}(d^5)$ . The maxima of the MS at about 160 and 270 K are associated with antiferromagnetic transitions in the MnSe inclusions. A wide EPR line is caused by weakly interacting  $\text{Mn}^{2+}$  ions which are not included into ferromagnetic and antiferromagnetic clusters.