substance: $FeSi_2$
property: magnetic properties

magnetic susceptibility
(in 10^{-8} cm^3 g^{-1})

see also Figs. 1, 2

χ_g	– 4 + 20	T = 300 K T_{dec}	χ_g in CGS-emu	69B

magnetic susceptibility $\chi(T)$ in the intrinsic conduction range: Figs. 1, 2

References:

69B Birkholz, U., Frühauf, A.: Phys. Status Solidi 34 (1969) K 181.
70B Birkholz, U., Frühauf, A., Schelm, J.: Proc. Tenth Int. Conf. Phys. Semicond., Cambridge, Mass. (1970) 311.

Fig. 1.

$FeSi_2$. Product of magnetic mass susceptibility and temperature vs. reciprocal temperature in the intrinsic-conduction range [69B]. The solid curve is calculated as $\chi_g T = (2g\mu_B^2/dk)\cdot e^{-Eg/2kT}$, with g = density of states, d = density and μ_B = Bohr magneton. χ in CGS-emu.

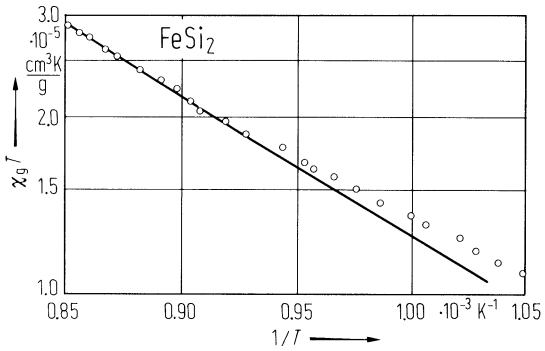

Fig. 2.

$FeSi_2$. Mass susceptibility (χ_g in CGS-emu) vs. temperature [69B, 70B]. Sintered samples. *a*: nominal composition 50.15 wt% Si corresponding to $FeSi_2$, *b*: 55.0 wt% Si corresponding to $Fe_{0.82}Si_2$ or $FeSi_2$ + 0.43 Si. Sample *a* still contained traces of FeSi even after prolonged annealing. Its high- temperature part of $\chi_g(T)$ as well as the curve for the quenched state are cut off by the frame of the figure. The upper part of curve *b* represents the intrinsic property of $Fe_{0.8}Si_2$ (α-$FeSi_2$) while the lower curve *b* results from β-$FeSi_2$ + 0.43 Si, the contribution of the diamagnetic Si precipitations being small.