

substance: Ru₂Ge₃

property: physical properties

Ru₂Ge₃ (r) (room-temperature modification)

energy gap

$E_{g,th}$	0.52 eV	from $\rho \propto \exp(E_g/2kT)$, $T = 550...700$ K, polycrystalline bar	80S
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electron concentration

n	$0.7 \cdot 10^{18} \text{ cm}^{-3}$	$T = 1.5$ K	estimated from $R_H = -8.62 \text{ cm}^3 \text{ C}^{-1}$	80S
	$0.9 \cdot 10^{18} \text{ cm}^{-3}$	$T = 41$ K	estimated from $R_H = -7.14 \text{ cm}^3 \text{ C}^{-1}$	
	$1.7 \cdot 10^{18} \text{ cm}^{-3}$	$T = 175$ K	estimated from $R_H = -3.63 \text{ cm}^3 \text{ C}^{-1}$	
	$< 7.5 \cdot 10^{18} \text{ cm}^{-3}$	$T = 1.5...5$ K	free-electron concentration derived from $\gamma = 29 \cdot 10^{-6}$ $\text{J K}^{-2} (\text{g-atom})^{-1}$ of the heat capacity	

Debye temperature

Θ_D	435 K	$T = 1.5...5$ K	from heat-capacity measurements	80S
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magnetic susceptibility

χ_g	$0.43 \cdot 10^{-6} \text{ cm}^3 \text{ g}^{-1}$	$T = 50...900$ K, $B = 5...10$ kG	Faraday method, powder sample; χ roughly temperature independent; χ in CGS-emu	80S
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transition temperature

T_{tr}	800 K	from X-ray diffraction and resistivity	75P, 80S
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Ru₂Ge₃ (h) (high-temperature modification)

energy gap

$E_{g,th}$	0.34 eV	from resistivity measurements, $T = 800...1100$ K	80S
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Roughly linear decrease of E_g of the high-temperature modification with Sn concentration [80S].

magnetic susceptibility

χ_g	$-0.43 \cdot 10^{-6} \text{ cm}^3 \text{ g}^{-1}$	$T = 900$ K,	linearly increasing above 900 K,	80S
	$-0.39 \cdot 10^{-6} \text{ cm}^3 \text{ g}^{-1}$	$B = 5...10$ kG	Faraday method, powder sample, χ_g in CGS-emu	

peritectic temperature

T_{perit}	1770 K		80S
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References:

- 75P Poutcharovsky, D. J., Yvon, K., Parthé, F.: J. Less-Common Met. 40 (1975) 139.
80S Susz, C. P., Muller, J., Yvon, K., Parthé, F.: J. Less-Common Met. 71 (1980) P1.