

substance: Pt_{0.97}S₂

property: crystal structure, physical properties

(S: structure (space group), CG: crystal growth (the numbers in parentheses correspond to T_1 and T_2 , the temperatures (in °C) of the hot and cold end of the crystal growth tube, respectively)).

(All references in the last column refer to all data of this document)

lattice parameters

a	3.542 Å	S: trigonal, $D_{3d}^3 - P\bar{3}m1$	74F,
c	5.043 Å	CG: halogen transport with traces of phosphorus (800/740)	77M

resistivity, Seebeck coefficient

ρ_{\perp}	$2 \cdot 10^{-2} \Omega \text{ cm}$	p- or n-type,	
S_{\perp}	$500 \mu\text{V K}^{-1}$	synthetic	diamagnetic
		single crystal	

energy gap

E_g	0.95 eV	optical gap; indirect gap for both
dE_g/dT	$-3.7(2) \cdot 10^{-4} \text{ eV/K}$	E_{\perp} and E_{\parallel} between d states
		of Pt with VB (max) at M (or L) and
		CB (min) at Γ .
$E_{g,th}$	0.4 eV	

Figures to this document:

resistivity: Fig. 1

References:

- 74F Finley, A., Schleich, D., Ackerman, J., Soled, S., Wold, A.: Mater. Res. Bull. 9 (1974) 1655.
77M Mankai, C., Martinez, G., Gorochoy, O.: Phys. Rev. 16B (1977) 4666.

Fig. 1.

$\text{Pb}_{0.97}\text{S}_2$. Resistivity vs. reciprocal temperature for a polycrystalline sample [74F].

