substance: $RuAs_2$, $RuSb_2$
property: physical properties

$RuAs_2$

Energy level scheme is similar to that given for $FeAs_2$ (Fig. 1).

energy gap

E_g	≈ 0.8 eV	T = 295 K	from diffuse reflectance of powder	63H

thermoelectric power

S	≈ – 350 μV K^{-1}	T = 295 K	sintered sample	63H

magnetic susceptibility
(in 10^{-6} cm^3 mol^{-1}, χ in CGS units)

χ_m	– 73	T = 295 K	powder sample	63H
	– 67	T = 85 K		
	– 42	T = 90...770 K, B < 0.8 T	polycrystalline sample	68H

far infrared absorption: for spectrum in the range 50...400 cm^{-1} see [83L].

$RuSb_2$

Energy level scheme is similar to that given for $FeAs_2$ (Fig. 1).

energy gap

$E_{g,th}$	> 0.3 eV		from log $\rho \propto E_g/2kT$ above 450 K, sintered sample	63H

resistivity

ρ	≈ 1 Ω cm	RT	sintered sample	63H

thermoelectric power

S	≈ – 250 μV K^{-1}		sintered sample	63H

magnetic susceptibility
(in 10^{-6} cm^3 mol^{-1}, χ in CGS units)

χ_m	– 82	T = 295 K	powder sample	63H
	– 74	T = 85 K		
	– 78	T = 90 K, B <0.8 T	linear up to 770K, polycrystalline sample	68H
	– 80.4	T = 770 K		

far infrared absorption: for spectrum in the range 50...400 cm^{-1}, see [83L].

melting temperature

T_m	1600 K		estimated visually	63H

Brinell hardness

H_B	420 kg mm^{-2}		polycrystalline sample reacted at 1373 K	60K

Comparative tables on structural data of transition metal dipnictides:

structure, chemical bond: see document ,

crystallographical data of compounds with octahedrally coordinated cations, see document ,

interatomic distances in marcasite- and loellingite-type compounds, see document .

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Fig. 1.

$FeAs_2$. One-electron energy levels for the valence electrons in loellingite [72F, 72G].