substance: V_2O_3
property: transport properties, high-temperature phase, $T > T_{tr}$

resistivity

ρ	$6.3(6)\cdot10^{-4}$ Ω cm	‖ a, T = 273 K	ρ almost isotropic, $\rho_c/\rho_a \approx 0.9$	67F
	$5.6(6)\cdot10^{-4}$ Ω cm	‖ c, T = 273 K	at 273 K and increases to 1.1 at 625 K	
$\rho(T)/\rho(0^oC)$	$0.36 + 2.3\cdot10^{-3}\,T$	T = 160...340K		
d ln ρ/dT	$1.8\cdot10^{-3}$ K^{-1}	T = 298 K		69M1, 69M2
d ln ρ/dp	$-1.0\cdot10^{-2}$ kbar^{-1}	T = 298 K, p = 25 kbar	conductivity vs. hydrostatic pressure: Fig. 1. Some anisotropy reported	69M1, 69M2
	$-1.4\cdot10^{-2}$ kbar^{-1}	ρ ‖ a, T = 298 K		67F
	$-7.6\cdot10^{-4}$ kbar^{-1}	ρ ‖ c, T = 298 K		

change of transition temperature with pressure
(see Fig. 1)

dT_{tr}/dp	$-3.78\cdot10^{-3}$ K bar^{-1}		hydrostatic pressure 1...6000 bar	67F
d ln T_{tr}/dp	$-2.6\cdot10^{-5}$ bar^{-1}		T_{tr} increases by 2.3 K on doping with 11 at % ^{18}O [80R]	

effective mass

m_n	50 m_0			67F
	31 m_0		from heat capacity near 0 K at 20 kbar	73M
	52 m_0		$V_{1.97}O_3$, near 0 K	73M

carrier mobility

μ	0.2 cm^2/V s	RT	orientation not specified	67F
μ_H	0.2...0.6 cm^2/V s	RT	current in basal plane (‖ a), B ‖ c	69A

Hall coefficient

R_H	$2.3(1)\cdot10^{-4}$ cm^3 C^{-1}	T = 300...800K	n-type material, Fig. 2; B ‖ c; I in basal plane	69A

carrier concentration

n	$2.7\cdot10^{22}$ cm^{-3}		0.6 carriers per V-atom	69A

Seebeck coefficient

S	11...13 μV K^{-1}	along c-axis, T = 170...800 K	positive (!), Fig. 3	69A

References:

67F Feinleib, J., Paul, W.: Phys. Rev. 155 (1967) 841.

69A Austin, I. G., Turner, C. E.: Philos. Mag. 19 (1969) 939.

69M1 McWhan, D. B., Rice, T. M.: Phys. Rev. Lett. 22 (1969) 887.

69M2 McWhan, D. B., Rice, T. M., Remeika, J. P.: Phys. Rev. Lett. 23 (1969) 1384.

73M McWhan, D. B., Remeika, J. P., Bader, S. D., Triplett, B. B., Phillips, W. E.: Phys. Rev. B7 (1973) 3079.

80R Reichelt, W., Oppermann, H., Wagner, H., Terukov, E. I., Wolf, E.: Z. Anorg. Allg. Chem. 463 (1980) 193.

Fig. 1.

V_2O_3. (a) Resistivity vs. temperature in the metallic phase above the critical pressure for two samples. Sample 2 is apparently V deficient. (b) AF – M transition temperature vs. pressure [69M1].

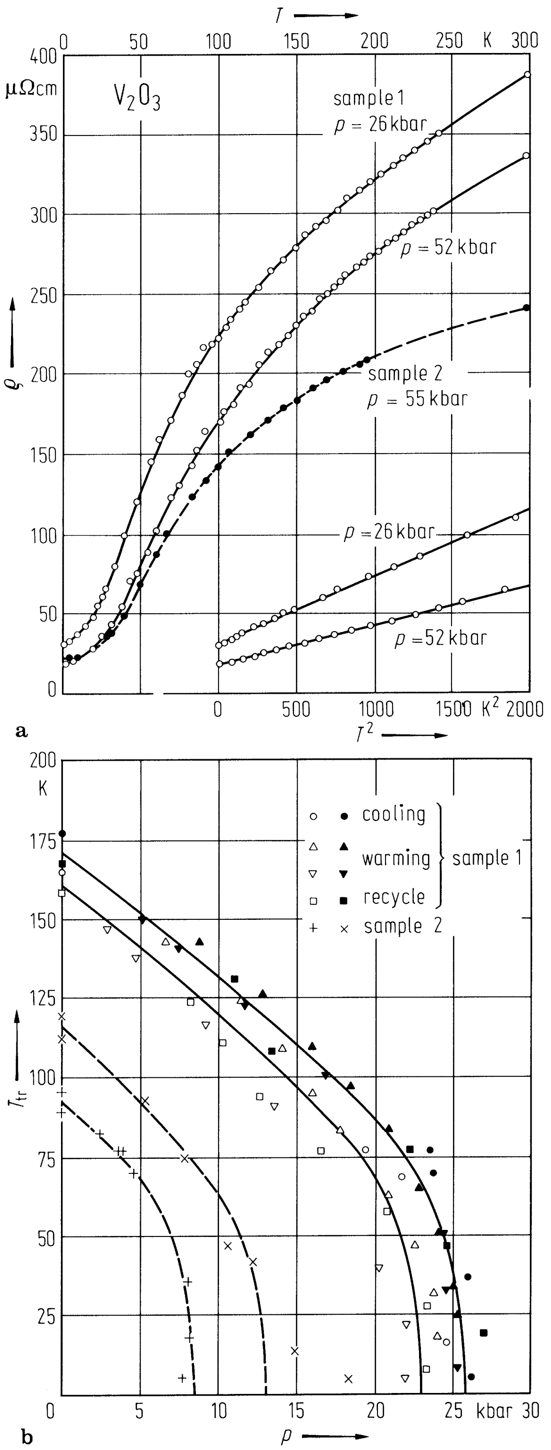

Fig. 2.

V_2O_3. Resistivity, Hall coefficient and Hall mobility vs. temperature for metallic V_2O_3. Magnetic field along *c*-axis, current in basal plane [69A].

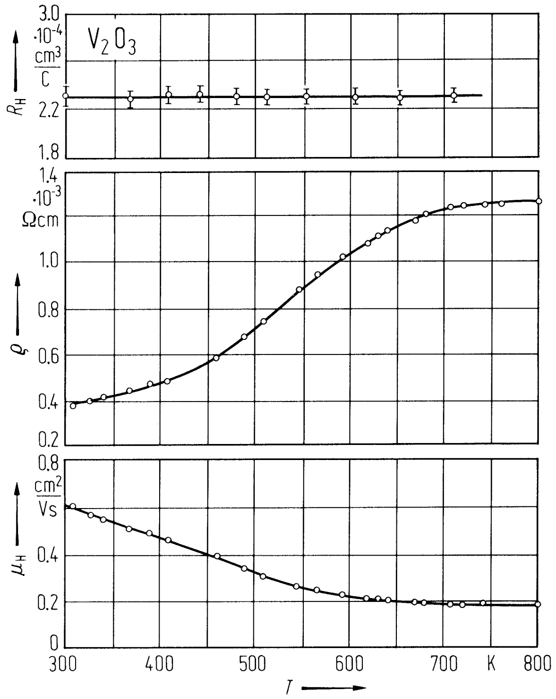

Fig. 3.

V_2O_3. Seebeck coefficient vs. temperature above and below T_{tr} [69A]. Orientation not given.