

substance: MnO

property: elastic moduli, Debye temperature

elastic moduli

(in 10^{12} dyn cm $^{-2}$)

c_{11}	2.23	$T = 298$ K	At $T \approx T_N$, c_{11} decreases by 19.2% over 0.3°C as T is lowered, whereas c_{44} decreases strongly at 10°C above T_N , falling by 30% at just above T_N [70C]. The slow shear mode, $[1/2(c_{11}-c_{12})]$ shows complex behaviour at T_N and a further anomaly at 42 K [80P].	69O
	2.22	$T = 296$ K		72U
	1.768(6)	above T_N		70C
c_{12}	1.2	$T = 298$ K	at just above T_N [70C]. The slow shear mode, $[1/2(c_{11}-c_{12})]$ shows complex behaviour at T_N and a further anomaly at 42 K [80P].	69O
	1.099	$T = 296$ K		72U
c_{44}	0.79	$T = 298$ K	complex behaviour at T_N and a further anomaly at 42 K [80P].	69O
	0.783	$T = 296$ K		72U
	0.68(1)	above $T_N + 20$ K		70C

Debye temperature

Θ_D	533 K	$T = 298$ K	from elastic constants	78S
	525.7 K	$T = 298$ K	from elastic constants	81F

References:

- 69O Oliver, D. W.: J. Appl. Phys. 40 (1969) 893.
70C Cracknell, M. F., Evans, R. G.: Solid State Commun. 8 (1970) 359.
72U Uchiba, N., Saito, S.: J. Acoust. Soc. Am. 51 (1972) 1602.
78S Subhadra, K. G., Sirdesmukh, D. B.: Indian J. Pure Appl. Phys. 16 (1978) 693.
80P Palmer, S. B., Waintal, A.: Solid State Commun. 34 (1980) 663.
81F Freer, R.: J. Mater. Sci. 16 (1981) 3225.