

No. M15-vi Cd_{1-x}Zn_xTe

1a	Ferroelectricity in Cd _{1-x} Zn _x Te (x = 0.04...0.45) was found from the dielectric constant and <i>D-E</i> hysteresis loop by R. Weil et al. in 1989.		89Wei
b	phase	II	I
	state	F ^{a)}	P ^{a)}
	crystal system	rhombohedral ^{b)}	cubic ^{c)}
	Transition temperature varies from 100 °C to 250 °C with composition x.		^{a)} 89Wei ^{b)} 90Mar, 91Nku ^{c)} 91Nku
	Polar axis [111].		89Wei, 93Ter 89Wei, 90Mar
2	Crystal growth: modified Bridgman method: see		83Mur
3a	Unit cell parameters: <i>a</i> = 6.401(1) Å, <i>α</i> = 89.94(1)° (rhombohedral) at RT for x = 0.22; see also Table M15-vi-001.		90Mar
b	Crystal structure: phase I, zinc blende (f.c.c.) structure; phase II, distorted zinc blende structure. The Te atom shifts by about 0.1 Å along a <i>⟨</i> 111 <i>⟩</i> direction from the original position in a true zinc blende structure. Table M15-vi-001.		91Nku 90Mar, 91Nku
5a	Dielectric constant vs. <i>T</i> : Fig. M15-vi-001, Fig. M15-vi-002. Curie constant and Curie temperature vs. x: Fig. M15-vi-003. Dielectric constant at optical frequency: see <i>κ</i> _∞ (x) = 7.26–0.05x.		93Ada1 93Ada2
c	<i>D-E</i> hysteresis loops: see <i>P</i> _s vs. <i>T</i> curve: Fig. M15-vi-004.		89Wei
6a	Heat capacity: see		93Ben, 98Kaw
9a	Refractive indices: Fig. M15-vi-005. Birefringence vs. <i>T</i> : Fig. M15-vi-006. Optical absorption and reflection: see Far-infrared reflectivity: see		93Ada1 93Tal
10a	Raman scattering: see		93Tal
11	Conductivity: <i>σ</i> ≈ 10 ⁻¹ Ω ⁻¹ m ⁻¹ at RT for x = 0.1. Charge-carrier mobilities for x = 0.2: electron mobility ∝ <i>T</i> ^{-1.1} in 200...320 K (0.135 m ² V ⁻¹ s ⁻¹ at RT), hole mobility ∝ <i>T</i> ^{-2.0} in 200...320 K (0.0120 m ² V ⁻¹ s ⁻¹ at RT). Photoluminescence spectra: see		93Ben 93Bur 93Dav
14c	EXAFS: see		93Bun, 93Ter