No. 41A-9 $CsLiWO_4$, Cesium lithium tungstate

(M = 387.69)

1a Ferroelectricity in $CsLiWO_4$ was reported by Aleksandrov et al. in 1981. 81Ale

b

phase	III	II	I
state	F	F	P
crystal system	monoclinic	trigonal	cubic
space group	$Bm - C_s^3$	$R3m - C_{3v}^5$	$F\bar{4}3m - T_d^2$
Θ [K]	191	221	

P_s || [111]. 81Ale

$\rho_X = 4.42 \cdot 10^3$ kg m^{-3}. 80Oka

3a Unit cell parameters:
Phase I (at 298 K): a = 8.350(1) Å. 80Oka
Phase II: trigonal system: a = 5.91 Å, α = 59.5°; 81Ale
hexagonal system: $a = b$ = 5.836(3) Å, c = 14.322(8) Å. 81Ale
Phase III: a = 5.85 Å, b = 5.86 Å, c = 10.25 Å, β = 125.5°. 81Ale

b Z = 4 (in phase I), Z = 3 (in phase II), Z = 2 (in phase III). 85All
Crystal structure of phase I: Fig. 41A-9-001, Fig. 41A-9-002, Fig. 41A-9-003.
Fractional coordinates and isotropic temperature parameters: Table 41A-9-001, Table 41A-9-002.
Interatomic distances: Table 41A-9-003, Table 41A-9-004.
Crystal structure of phase II: Fig. 41A-9-004.

5a Dielectric constant at 180...250 K: Fig. 41A-9-005.

c Spontanous polarization at 160...230 K: Fig. 41A-9-006.

6a Specific heat capacity: Fig. 41A-9-007.
See also 84Ale
Transition entropy ΔS_m: 83Fle
at II–I transition: 0.3 R, at III–II transition: 0.334 R.
Transition heat ΔQ_m: 83Fle
at II–I transition: 600 J mol^{-1}, at III–II transition: 450 J mol^{-1}.

9b Electrooptic coefficient: Fig. 41A-9-008.

e Nonlinear optical properties: $I_{2\omega} / I_{2\omega}^{SiO_2} = 35$. $I_{2\omega}$: SHG intensity. 84Kab