

No. 39A-22 [N(CH₃)₄]₂ZnI₄, Tetramethylammonium tetraiodozincate
 (*M* = 721.30; *D*:745.45)

1a	Ferroelectricity in [N(CH ₃) ₄] ₂ ZnI ₄ was discovered by Gesi and Perret in 1988.					88Ges	
b	phase	III	II	I		86Wer	
	state	F					
	crystal system	orthorhombic	monoclinic	orthorhombic			
	space group	Pbc2 ₁ –C _{2v} ⁵	P12 ₁ /c1–C _{2h} ^{5 a)}	Pmcn–D _{2h} ¹⁶		a) 90Has	
	Θ [K]	210 ^{b)}		254 ^{b)}		b) 88Ges	
	<i>P</i> _s [001].					88Ges	
	ρ _x = 2.24 · 10 ³ kg m ^{–3} at 293 K.					90Wer	
	Transparent, colorless. Cleavage plane: (010).					88Ges	
	Phase diagram in regard to <i>p</i> : Fig. 39A-22-001.						
2a	Crystal growth: evaporation of aqueous solution containing a great excess of ZnI ₂ .					88Ges	
b	Crystal form: Fig. 39A-22-002.						
3a	Unit cell parameters:						
	phase	<i>T</i> [K]	<i>a</i> [Å]	<i>b</i> [Å]	<i>c</i> [Å]	β [°]	
	I	293	9.668(9)	16.765(4)	13.303(6)		90Wer
	II	250	9.612(9)	16.656(15)	13.222(18)	90.15(4)	90Has
	III	150	9.574(3)	33.020(6)	13.106(3)		90Wer
b	<i>Z</i> = 4 ^{a)} for phase I, <i>Z</i> = 4 ^{b)} for phase II, <i>Z</i> = 8 ^{a)} for phase III.					a) 86Wer b) 90Has	
	Positional and temperature parameters: Table 39A-22-001, Table 39A-22-002.						
	Interatomic distances and angles: Table 39A-22-003, Table 39A-22-004.						
	Crystal structures: Fig. 39A-22-003, Fig. 39A-22-004, Fig. 39A-22-005.						
	Structural change associated with phase transitions: Table 39A-22-005.						
5a	Dielectric constants: Fig. 39A-22-006, Fig. 39A-22-007, Fig. 39A-22-008.						
	Effect of <i>p</i> : Fig. 39A-22-009.						
c	Spontaneous polarization: Fig. 39A-22-010.						
6a	Specific heat: Fig. 39A-22-011.						
9a	Birefringence: see					91Vlo	
10a	Raman scattering: see					90Wan, 91Wan	
13a	¹⁴ N NMR: Fig. 39A-22-012, Fig. 39A-22-013.						
	¹²⁷ I NQR: Fig. 39A-22-014.						