

**No. 28A-2 AgNa(NO<sub>2</sub>)<sub>2</sub>, Silver sodium nitrite**  
 ( $M = 222.87$ )

1a	Ferroelectricity in AgNa(NO <sub>2</sub> ) <sub>2</sub> was discovered by Gesi in 1969.		69Ges
b	phase	II	I
	state	F	P
	crystal system	orthorhombic	orthorhombic
	space group	Fd2d–C <sub>2v</sub> <sup>19 a)</sup>	Fddd–D <sub>2h</sub> <sup>24 a)</sup>
	Θ <sub>f</sub> [K]	311	
	P <sub>s</sub>    [010].		
	ρ = 3.26 · 10 <sup>3</sup> kg m <sup>–3</sup> at RT.		
	ρ <sub>X</sub> : see Table 28A-2-001 in subsection 3a.		
	Transparent, yellowish. Cleavage plane: {101}.		
2a	Crystal growth: evaporation from aqueous solution; solubility of AgNO <sub>2</sub> –NaNO <sub>2</sub> –H <sub>2</sub> O: Fig. 28A-2-001.		
b	Crystal form: Fig. 28A-2-002.		
3a	Unit cell parameters: Table 28A-2-001.		
b	Z = 8 in phases I and II.		74Ish
	Crystal structure: Table 28A-2-002, Table 28A-2-003, Table 28A-2-004; Fig. 28A-2-003, Fig. 28A-2-004.		
4	Temperature dependence of unit cell parameters: Fig. 28A-2-005, Fig. 28A-2-006.		
5a	Dielectric constant: Fig. 28A-2-007.		70Ges2
	Curie Weiss behavior: κ <sub>0</sub> = κ <sub>∞</sub> + C/(T – Θ <sub>p</sub> ), T > Θ <sub>p</sub> , where C = 4.63 · 10 <sup>3</sup> K, Θ <sub>p</sub> = 310.1 K, κ <sub>∞</sub> = 6.		
	Dielectric relaxation: Fig. 28A-2-008, Fig. 28A-2-009, Fig. 28A-2-010.		73Ges, 70Bel
	Effect of hydrostatic pressure:		
	[dΘ <sub>f</sub> /dp] <sub>p=0</sub> = 9.4(2) · 10 <sup>–8</sup> K Pa <sup>–1</sup> ,		77Hel
	[dΘ <sub>p</sub> /dp] <sub>p=0</sub> = 9.3 (2) · 10 <sup>–8</sup> K Pa <sup>–1</sup> .		
	Pressure dependence of dielectric relaxation: Fig. 28A-2-011, Fig. 28A-2-012, Fig. 28A-2-013; see also Fig. 28A-2-019.		
b	Nonlinear dielectric property: ξ = –1.45(25) · 10 <sup>10</sup> V C <sup>–3</sup> m <sup>5</sup> , ζ = 7.4(7) · 10 <sup>12</sup> V C <sup>–5</sup> m <sup>9</sup> .		
c	Spontaneous polarization: Fig. 28A-2-014.		
6a	Heat capacity: Fig. 28A-2-015, Fig. 28A-2-016.		70Ges3
	Transition heat and transition entropy: ΔQ <sub>m</sub> = 3.41 kJ mol <sup>–1</sup> , ΔS <sub>m</sub> = 12.2 J K <sup>–1</sup> mol <sup>–1</sup> .		
7a	Piezoelectricity: Fig. 28A-2-017, Fig. 28A-2-018, Fig. 28A-2-019.		
8a	Elastic compliances: Fig. 28A-2-020.		
9a	Optical absorption in visible-ultraviolet region: see Fig. 28A-1-041 in No. 28A-1.		
10a	Raman scattering: Fig. 28A-2-021, Fig. 28A-2-022, Fig. 28A-2-023.		
11	Photoemission; luminescence: Fig. 28A-2-024.		
13a	NMR: Fig. 28A-2-025; see also NQR: Fig. 28A-2-026, Fig. 28A-2-027.		75Hik

15b Domain switching: Reversal of spontaneous polarization was observed at slow impress- 72Ges2  
ing rate of electric field at room temperature.

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