

**No. 20A-8 BiSI, Bismuth sulfide iodide***(M* = 367.94)

1a	Ferroelectric transition of BiSI at $-160\text{ }^{\circ}\text{C}$ was found by Nitsche et al. in 1964.		64Nit
b	phase	II	I
	state	F <sup>a)</sup>	P <sup>a)</sup>
	crystal system		orthorhombic <sup>b)</sup>
	space group		Pnam–D <sub>2h</sub> <sup>16</sup> <sup>b)</sup>
	$\Theta$ [ $^{\circ}\text{C}$ ]	$-160$ <sup>a)</sup>	
	$\rho = 6.60 \cdot 10^3\text{ kg m}^{-3}$ , $\rho_X = 6.75 \cdot 10^3\text{ kg m}^{-3}$ at RT.		50Don, 73Has
	Color: black (needles).		60Nit
2a	Preparation: $\text{BiI}_3 + \text{Bi}_2\text{S}_3 \rightarrow 3\text{BiSI}$ (reaction in sealed, evacuated ampoule).		60Nit, 64Nit, 65Hor, 70Pop
3a	Unit cell parameters: $a = 8.519(5)\text{ \AA}$ , $b = 10.177(8)\text{ \AA}$ , $c = 4.172(6)\text{ \AA}$ .		73Has
b	$Z = 4$ . Crystal structure in phase I: Fractional coordinates and temperature parameters: Table 20A-8-001. All atoms are at 4c positions of Pnam–D <sub>2h</sub> <sup>16</sup> . See also		50Don
5a	Curie-Weiss constant: $C = 1.9 \cdot 10^5\text{ K}$ ; $\Theta_p = 88\text{ K}$ .		68Pik
b	$\xi = -89 \cdot 10^8\text{ VC}^{-3}\text{ m}^5$ , $\zeta = 950 \cdot 10^9\text{ VC}^{-5}\text{ m}^9$ .		
c	$P_s = 7 \cdot 10^{-2}\text{ C m}^{-2}$ .		
6a	Transition heat: $\Delta Q_m = 8.8\text{ J mol}^{-1}$ ; transition entropy: $\Delta S_m = 0.08\text{ JK}^{-1}\text{ mol}^{-1}$ .		68Pik
9a	Reflectivity and dielectric constants: see Fig. 20A-7-047, Fig. 20A-7-049, Fig. 20A-7-050 in No. 20A-7.		
11	Conducting properties and photoconductivity: see		60Nit, 65Hor, 65Sas
12	Magnetic susceptibility: see Fig. 20A-1-004 in No. 20A-1.		
13a	NQR data: Table 20A-8-002. See also		69Kra