

No. 27A-2 HBr, Hydrogen bromide $(M = 80.91; [D: 81.92])$

1a	Ferroelectricity in HBr was discovered by Hoshino et al. in 1967.					67Hos
b	phase	IV	III	II	I	
	state	F				a) 71Sim
	crystal system	orthorhombic	orthorhombic	cubic	cubic	b) 68San
	space group	Bb2 ₁ m–C _{2v} ^{12 a)}	Bbcm–D _{2h} ^{18 b)}		Fm3m–O _h ^{5 c)}	c) 70Sim
	Θ[K] ^{d)}	89.75 [D: 93.5]		113.62	116.86	d) 47Clu
	In DBr, phase II does not appear; Θ _{III-I} = 120.26 K in DBr.					47Clu
	Phase diagram of HBr–DBr system: Fig. 27A-2-001.					
	T _{melt} = 186.28 [D: 185.62] K.					47Clu
2a	Crystal growth: cooling method from liquid phase.					67Hos
3a	Unit cell parameters: Table 27A-2-001.					
b	Z = 4 in phases I ^{a)} , III ^{b)} , IV ^{b)} .					a) 70Sim b) 68San
	Crystal structure: Table 27A-2-002; Fig. 27A-2-002, Fig. 27A-2-003.					
4	Thermal expansion: Table 27A-2-003; Fig. 27A-2-004.					
5a	Dielectric constant: Fig. 27A-2-005.					
	Dielectric dispersion: see					53Bro, 54Swe, 55Hav, 57Col, 67Gro
	Phase diagram with regard to p: Fig. 27A-2-006.					
c	Spontaneous polarization: Fig. 27A-2-007.					
6a	Heat capacity: Fig. 27A-2-008.					
	Transition heats and transition entropies of HBr and DBr: Table 27A-2-004.					
8a	Volume compressibility: β = 3.72 · 10 ^{−10} Pa ^{−1} at 150 K (phase I).					62Ste
9a	Infrared absorption: Fig. 27A-2-009; see also					71Car
	Far infrared absorption: pressure effect: Fig. 27A-2-010.					
10a	Raman scattering: Fig. 27A-2-011, Fig. 27A-2-012, Fig. 27A-2-013 and Fig. 27A-1-011 in No. 27A-1.					
	See also					64And, 70Ito
	Pressure effect: Fig. 27A-2-014.					
13a	NMR: Fig. 27A-2-015 and Fig. 27A-1-013, Fig. 27A-1-015 in No. 27A-1.					
	NQR: Fig. 27A-2-016, Fig. 27A-2-017.					
14b	Inelastic scattering of cold neutrons: see					65Bou