No. 32A-3 $KIO_3 \cdot HIO_3$, Potassium biiodate

(M = 389.91)

1a Possibility of ferroelectricity in α-modification of $KIO_3 \cdot HIO_3$ was reported first by Petrosyan et al. in 1978. 78Pet1

b α-modification:

phase	II	I	78Pet1
state	(F)	P	
crystal system	monoclinic	monoclinic	
space group	($P12_11-C_2^2$)	$P12_1/c1-C_{2h}^5$ [a])	[a]) 75Vav
Θ [K]	223(2)		

Three other modifications β, γ and δ have been reported. Crystal systems and space groups at RT: orthorhombic, $Pca2_1-C_{2v}^5$ for δ-modification [b]); [b]) 74Vav
monoclinic, $P12_1/c1-C_{2h}^5$ for γ-modification [c]); orthorhombic, $Fdd2-C_{2v}^{19}$ for δ-modification [d]). [c]) 71Cha [d]) 77Kun
$\rho = 4.045 \cdot 10^3$ kg m^{-3}. 69Arg
Phase diagram in regard to p: Fig. 32A-3-001.

2a Crystal growth of α, β and γ-modification: evaporation of aqueous solution; for gel-growth method, see 80LiY
Crystal growth of δ-modification: cooling aqueous solution from 140 °C, $3 \cdot 10^5$ Pa to 60 °C, $1.2 \cdot 10^5$ Pa at the rate of 1 °C/day. 76Ham

b Crystal form: see 78Pet1

3a Unit cell parameters:
α-modification: a = 10.583(1) Å, b = 7.447(1) Å, c = 8.626(1) Å, β = 112.19(1)° at RT. 78Tre2
β-modification: a = 8.611(3) Å, b = 7.506(3) Å, c = 19.562(3) Å at RT. 85Sor
γ-modification: a = 7.025(2) Å, b = 8.206(2) Å, c = 21.839(5) Å, β = 97.98(2)° at RT. 72Kem
δ-modification: a = 8.1380(9) Å, b = 39.3610(56) Å, c = 11.5458(18) Å at RT. 78Ily

b α-modification:
In this subsection, the second setting of cell is adopted: $\boldsymbol{a}' = \boldsymbol{a}$, $\boldsymbol{b}' = \boldsymbol{c}$, $\boldsymbol{c}' = -\boldsymbol{b}$.
Z = 4 at RT. 75Vav
Positional parameters: Table 32A-3-001; see also 75Vav
Interatomic distances and angles: Table 32A-3-002.
Crystal structure: Fig. 32A-3-002, Fig. 32A-3-003, Fig. 32A-3-004.
β-modification:
Z = 8 at RT. 74Vav
Positional and temperature parameters: Table 32A-3-003; see also 74Vav
Interatomic distances: Table 32A-3-004.
Crystal structure: Fig. 32A-3-005.
γ-modification:
Z = 8 at RT. 71Cha
Positional and temperature parameters: Table 32A-3-005; see also 71Cha
Interatomic distances and angles: Table 32A-3-006.
Crystal structure: Fig. 32A-3-006.
δ-modification:
Z = 24 at RT. 77Kun
Positional and temperature parameters: Table 32A-3-007; see also 77Kun

	Interatomic distances and angles: Table 32A-3-008, Table 32A-3-009. Crystal structure: Fig. 32A-3-007, Fig. 32A-3-008.	
5a	Dielectric constant: Fig. 32A-3-009, Fig. 32A-3-010, Fig. 32A-3-011. Curie-Weiss law constants: 13450(700) K in phase I. Effect of E_{bias} on Θ_f: Fig. 32A-3-012.	91Bai
b	Effect of E_{bias} on κ: Fig. 32A-3-013. Effect of E on κ: Fig. 32A-3-014.	
6a	DTA, DTG: see	69Arg, 83Pet
9a	Dispersion of refractive indices and optical transmission spectrum of β-modification: see Infrared absorption of α, β, γ and δ-modification: see	73Iva 83Pet, 97Bar
b	Electrooptical coefficients of β-modification: see	73Iva
13a	NQR of α, β, γ and δ-modification: Table 32A-3-010, Table 32A-3-011, Table 32A-3-012, Table 32A-3-013; Fig. 32A-3-015, Fig. 32A-3-016, Fig. 32A-3-017. Effect of p on NQR: see	86Bai, 92Bar