No. 25A-2 $RbFeBr_3$, Rubidium iron tribromide

(M = 381.027)

1a Ferroelectricity in $RbFeBr_3$ was discovered by Mitsui et al. in 1994. 94Mit

b

phase	III	II	I	
state	F			
crystal system	hexagonal		hexagonal	
space group	$P6_3cm - C_{6v}^3$		$P6_3/mmc - D_{6h}^4$	73Eib
Θ [K]	34.4		109.0	94Mit

Successive magnetic phase transitions: T_{N1} = 5.5 K, T_{N2} = 2.0 K. 94Mit

2a Crystal growth: Bridgman method from a melt of equimolar mixture of RbBr and $FeBr_2$. 92Kat

3a a = 7.422 Å, c = 6.304 Å at RT (phase I). 89Har
$a' = \sqrt{3}\,a$, $c' = c$ in phase III. 94Mit

b Z = 2 in phase I. 89Har
Z = 6 in phase III. 94Mit

5a Dielectric constant: Fig. 25A-2-001.
Curie-Weiss constant: $C = 2.8 \cdot 10^2$ K ($| T - \Theta_{II-III} | / \Theta_{II-III} < 0.07$), $\kappa_c(\infty) = 8$. 94Mit

c Spontaneous polarization: Fig. 25A-2-002.
Coercive field: see 94Mit