No. 39A-7 Rb_2CoCl_4, Rubidium tetrachlorocobaltate

(M = 371.68)

1a Ferroelectricity in Rb_2CoCl_4 was discovered by Sawada et al. in 1978. 78Saw

b

phase	IV	III	II *)	I
state		F		P
crystal system		orthorhombic		orthorhombic
space group				Pmcn– D_{2h}^{16} [a])
Θ [K]	66 [b])		192	295

[a]) 87Kas

[b]) 85Ges

*) Incommensurate structural modulation was found along the c axis. See subsection 14a. 87Kas

P_s || [100]. 88Shi

Cobalt blue in color, hygroscopic. 85Ges

Cleavage plane: (010). 85Ges

2a Crystal growth: Bridgeman method from stoichiometric melt. 85Ges

Zone melt method in quartz ampoules. 88Smu

3a Unit cell parameters: a = 7.643(8) Å, b = 12.716(18) Å, c = 9.227(8) Å at RT. 87Kas

b Z = 4 in phase I. 87Kas

5a Dielectric constant: Fig. 39A-7-001, Fig. 39A-7-002, Fig. 39A-7-003, Fig. 39A-7-004, Fig. 39A-7-005, Fig. 39A-7-006;
see also 86Bre
Dielectric dispersion: Fig. 39A-7-007, Fig. 39A-7-008, Fig. 39A-7-009, Fig. 39A-7-010.
Phase diagram in regard to p: Fig. 39A-7-011; see also Fig. 39A-2-015 in No. 39A-2.

c Spontaneous polarization and coercive field: Fig. 39A-7-012.
Spontaneous polarization by pyroelectric measurement: Fig. 39A-7-013.

6a Heat capacity: see 86Van

8a Sound velocity: Fig. 39A-7-014, Fig. 39A-7-015, Fig. 39A-7-016.

10a Raman scattering: Fig. 39A-7-017, Fig. 39A-7-018, Fig. 39A-7-019, Fig. 39A-7-020.

14a Bragg reflection due to structural modulations: Fig. 39A-7-021, Fig. 39A-7-022.