No. 35A-9 $RbTiOPO_4$, Rubidium titanyl phosphate (RTP)
(M = 244.32)

1a Ferroelectricity in $RbTiOPO_4$ was suggested by Zumsteg et al. in 1976. 76Zum
Dielectric anomaly was confirmed by Yanovskii et al. in 1985. 85Yan

b

phase	II	I	
state	(F)	P	
crystal system	orthorhombic	orthorhombic	
space group	$Pna2_1$ – C_{2v}^9	Pnam – D_{2h}^{16}	93Kad
Θ [°C]	789(2)		88Vor

P_s || [001]. 85Yan
T_{melt} = 1070 K. 76Zum
ρ = 3.597 · 10^3 kg m^{-3}; ρ_X = 3.626 · 10^3 kg m^{-3}. 88Vor
See also Table 35A-6-001 in No. 35A-6.

Transparent and colorless. 88Vor

2a Sample preparation:
Crystallites: see 86ElB
Simple reaction flux method: see 71Mas
Hydrothermal method: see 76Zum
Growth of large clear single crystals by flux method using RbH_2PO_4, $Rb_4P_2O_7$ and TiO_2 as starting materials: see 90Wan
Crystal growth from tungstate and molybdate fluxes. Crystal size: 2.5 × 3 × 5 cm^3: see 91Che
Growth of single crystals from phosphate systems Rb_2O–P_2O_5–$(TiO_2)_2$: see 92Ose
Crystal growth by flux method: see 93Kad
Crystal growth by flux method, flux is $Rb_6P_4O_{13}$: see 94Che
Epitaxial growth of films on $KTiOPO_4$ subtrates by laser ablation technique: see 94Liu

b Crystal habit: Fig. 35A-9-001.

3a a = 12.948(2) Å, b = 6.4942(9) Å, c = 10.551(1) Å, V = 887.2 $Å^3$. 93Kad
See also Table 35A-6-001 in No. 35A-6, Table 35B-1-006 in No. 35B-1.

b Z = 8. 93Kad
Crystal structure: Table 35A-9-001;
see also Table 35A-6-007 in No. 35A-6, Table 35A-11-003 in No. 35A-11, Table 35A-21-001 in No. 35A-21.

5a Dielectric constant: Table 35A-9-002; Fig. 35A-9-002, Fig. 35A-9-003, Fig. 35A-9-004, Fig. 35A-9-005, Fig. 35A-9-006;
see also Fig. 35A-6-013 in No. 35A-6, and 88Vor, 85Yan

7a Piezoelectricity: Table 35A-9-002.

8a Elastic compliances and stiffnesses: Table 35A-9-002.
See also Table 35A-6-012 in No. 35A-6.

9a Refractive index: Table 35A-9-003; Fig. 35A-9-007; see also Table 35A-6-013 in No. 35A-6.
Electrooptical coefficients at 20 °C:
r_{13} = 9.7, r_{23} = 10.8, r_{33} = 22.5, r_{51} = –7.6, r_{42} = 14.9 [· 10^{-12} m V^{-1}]. 90Wan
Optical transmission: Fig. 35A-9-008;
see also Fig. 35A-6-037 in No. 35A-6.

b	Electrooptic effect: Table 35A-6-018 in No. 35A-6.	
e	Nonlinear optical properties: Fig. 35A-9-009. See also Table 35A-6-018 in No. 35A-6, Table 35B-1-006 in No. 35B-1.	
10a	Raman scattering: Table 35A-9-004, Table 35A-9-005; Fig. 35A-9-010. See also Table 35A-6-023; Fig. 35A-6-069 in No. 35A-6.	
11	Electrical conductivity: Fig. 35A-9-011, Fig. 35A-9-012, Fig. 35A-9-013. See also Fig. 35A-6-084 in No. 35A-6. Luminescence: see Table 35A-6-025 in No. 35A-6.	
13a	^{31}P NMR: see Fig. 35B-1-017 in No. 35B-1.	
15a	Domain pattern observation by chemical etching and by a scanning electron microscope: see	87Vor
16	Observation of the dislocation etch pits: see	87Vor