

**No. 31A-4  $\text{RbH}_3(\text{SeO}_3)_2$ , Rubidium trihydrogen selenite** $(M = 342.41; [D: 345.43])$ 

1a	Ferroelectric activity in $\text{RbH}_3(\text{SeO}_3)_2$ was discovered by Shuvalov et al. in 1969.				69Shu
b	phase	II	I'	I	<sup>a)</sup> 69Shu
	state	F		P	<sup>b)</sup> 73Tel
	crystal system	monoclinic <sup>a)</sup>		orthorhombic <sup>a)</sup>	<sup>c)</sup> 74Akn,
	space group	$P2_1-C_2^2$ <sup>c)</sup>		$P2_12_12_1-D_2^2$ <sup>b)</sup>	78Gri1, 78Gri2
	$\theta$ [°C]	$\approx -120$ <sup>a)</sup>		$\approx -118$ <sup>d)</sup>	<sup>d)</sup> 78Gri2
	$P_s \parallel [010]$ .				69Shu
	$T_{\text{melt}} = 57.1$ °C.				69Shu
	$\rho_X = 3.42 \cdot 10^3$ kg m <sup>-3</sup> .				73Tel
	Transparent, colorless.				
	Gladkii et al. reported that the phase I' is an incommensurate phase.				79Gla
2a	Crystal growth: solution method (solvent H <sub>2</sub> O), cooling from temperatures lower than 10 °C in a dark room.				69Shu
b	Crystal form: Fig. 31A-4-001.				
3a	Unit cell parameters: $a = 5.9192(2)$ Å, $b = 17.9506(5)$ Å, $c = 6.2519(3)$ Å at RT.				73Tel
b	$Z = 4$ in phase I				73Tel
	Crystal structure: Table 31A-4-001, Table 31A-4-002, Table 31A-4-003; Fig. 31A-4-002; see also				77Noz, 73Tel
4	Thermal expansion: Fig. 31A-4-003.				
5a	Dielectric constant: Fig. 31A-4-004, Fig. 31A-4-005, Fig. 31A-4-006. Pressure effect: Table 31A-2-006, Fig. 31A-2-010 in No. 31A-2. $d\theta/dp = 5.8(2)$ K Pa <sup>-1</sup> . See also				73Ges 71Shi
c	Spontaneous polarization and coercive field: Fig. 31A-4-007, Fig. 31A-4-008, Fig. 31A-4-009; see also				80Got2
8a	Elastic compliance and stiffness: Fig. 31A-4-010. Sound velocity and attenuation: Fig. 31A-4-011.				
9a	Refractive indices: $n_a = 1.667$ , $n_b = 1.627$ , $n_c = 1.634$ at RT, $\lambda = 589.0$ nm. Fig. 31A-4-012. Birefringence: Fig. 31A-4-013. Reflectivity in far infrared region: Fig. 31A-4-014.				69Shu
b	Electrooptic effect: Fig. 31A-4-015.				
10a	Raman scattering: Fig. 31A-4-016, Fig. 31A-4-017.				
b	Brillouin scattering: Fig. 31A-4-018, Fig. 31A-4-019.				
13a	NMR: Table 31A-4-004, Table 31A-4-005; Fig. 31A-4-020, Fig. 31A-4-021, Fig. 31A-4-022, Fig. 31A-4-023, Fig. 31A-4-024, Fig. 31A-4-025, Fig. 31A-4-026; see also Table 31A-7-005 in No. 31A-7 and				74Sil, 79Vin

### 31 $\text{LiH}_3(\text{SeO}_3)_2$ family

b ESR and ENDOR: Table 31A-4-006; Fig. 31A-4-027, Fig. 31A-4-028; see also		75Ser
14a	Satellite reflections: Fig. 31A-4-029, Fig. 31A-4-030, Fig. 31A-4-031. b Inelastic scattering: Fig. 31A-4-032, Fig. 31A-4-033.	
15a	Domain structure: striped domains parallel to the $a$ - and $c$ -axis were observed on the (010) surface by means of a dew method in phase II.	80Got1, 80Got2