
No. 1C-c46 $\text{PbTiO}_3\text{--PbZrO}_3\text{--Sr}(\text{Li}_{2/5}\text{W}_{3/5})\text{O}_3$

7a Dielectric, piezoelectric and elastic properties: Table 1C-c46-001; Fig. 1C-c46-001.

8a Surface acoustic wave: see

74Kod

Table 1C-c46-001. 0.46 PbTiO₃·0.52 PbZrO₃·0.02 Sr(Li_{2/5}W_{3/5})O₃ (ceramics). Dielectric, piezoelectric and elastic characteristics [74Kod].

Dielectric constant		Elastic constant	
κ_{33}^T ($f = 1$ kHz)	1692	s_{11}^E [$\cdot 10^{-12}$ m ² N ⁻¹]	16.1
κ_{11}^T	1752	s_{12}^E	-5.48
		s_{13}^E	-8.04
Coupling factor		s_{33}^E	19.8
k_p	0.60	s_{44}^E	50.2
k_{31}	0.35	s_{11}^D	14.2
k_{33}	0.71	s_{12}^D	-7.41
k_{15}	0.72	s_{13}^D	-3.66
k_t	0.53	s_{33}^D	9.82
		s_{44}^D	23.9
Piezoelectric constant		s_{66}^E	43.2
d_{31} [$\cdot 10^{-12}$ CN ⁻¹]	-170	c_{33}^E [$\cdot 10^{10}$ Nm ⁻²]	11.2
d_{33}	387	c_{44}^E	1.99
d_{15}	638	c_{33}^D	15.5
g_{31} [$\cdot 10^{-3}$ m ² C ⁻¹]	-11.4	c_{44}^D	4.19
g_{33}	25.8	c_{66}^E	2.32
g_{15}	41.1		
Frequency constant *)		Density	
N_1 [Hz m]	1360	ρ [$\cdot 10^3$ kgm ⁻³]	7.60
N_{3t}	1970	Transition temperature	
		Θ_f [°C]	310
Mechanical quality factor			
Q_{mech}	68		

*) N_1 , N_{3t} are frequency constants for extensional vibration of a bar with length perpendicular and thickness longitudinal vibration of a plate with thickness parallel to the polar axis, respectively.

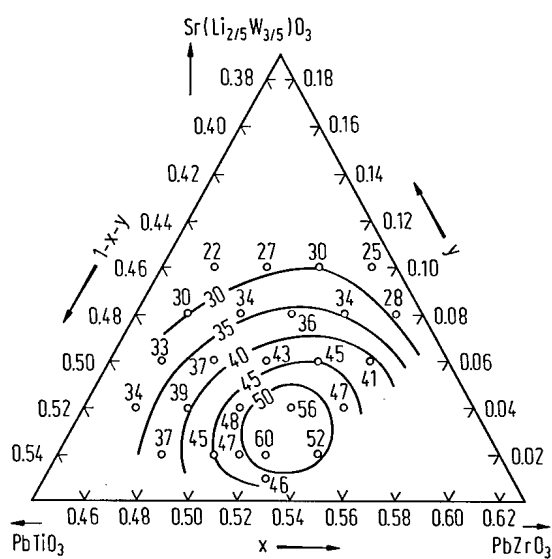


Fig. 1C-c46-001. $(1-x-y)\text{PbTiO}_3 \cdot x \text{PbZrO}_3 \cdot y \text{Sr}(\text{Li}_{2/5}\text{W}_{3/5})\text{O}_3$ (ceramics). k_p (in %) [74Kod]. Shown by equal k_p lines.

Reference

74Kod Kodama, M., Iwasaki, H.: Jpn. J. Appl. Phys. **13** (1974) 34.